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	1980	1985	1990
Population	176,000	200,000	220,000
GDP	\$1.2 billion	\$1.8 billion	\$2.5 billion
Unemployment rate	12%	10%	8%
Inflation rate	5%	10%	15%
Life expectancy at birth	65 years	68 years	70 years
Healthcare expenditure as % of GDP	3%	4%	5%
Primary school enrollment ratio	85%	90%	95%
Rural population as % of total	75%	70%	65%
Agriculture as % of GDP	25%	20%	15%
Manufacturing as % of GDP	15%	20%	25%
Services as % of GDP	60%	65%	70%
Government expenditure as % of GDP	10%	12%	15%
Foreign aid as % of GDP	2%	3%	4%
Urban population as % of total	25%	30%	35%
Female literacy rate	45%	55%	65%
Male literacy rate	55%	65%	75%
Infant mortality rate per 1,000 live births	120	100	80
Mortality rate per 1,000 live births	15	12	10
Fertility rate per woman	4.5	4.0	3.5
Sex ratio at birth	105	105	105
Age dependency ratio	100	95	90
Public debt as % of GDP	5%	10%	15%
Current account balance as % of GDP	-2%	-1%	0%
Trade balance as % of GDP	-3%	-2%	-1%
Export growth rate	5%	8%	10%
Import growth rate	7%	10%	12%
FDI inflows as % of GDP	1%	2%	3%
ODA inflows as % of GDP	1%	1%	1%
Remittances as % of GDP	0%	0%	0%
Savings rate as % of GDP	15%	18%	20%
Investment rate as % of GDP	18%	20%	22%
Research and development as % of GDP	0%	0%	0%
Patent applications per million people	0	0	0
Internet usage per 100 people	0	0	0
Mobile phone subscriptions per 100 people	0	0	0
Electricity consumption per capita	10 kWh	15 kWh	20 kWh
Clean water supply per capita	10 liters	15 liters	20 liters
Sanitation facilities per 100 people	50	60	70
Forest cover as % of land area	20%	20%	20%
CO ₂ emissions per capita	0.5 tons	0.5 tons	0.5 tons
Biodiversity index	Low	Low	Low
Human Development Index	0.45	0.55	0.65
Gender Inequality Index	High	Medium	Medium
Corruption Perception Index	Low	Low	Low
Political rights score	2	3	4
Civil liberties score	2	3	4
Economic freedom score	2	3	4
Environmental quality index	Low	Low	Low
Social justice index	Low	Low	Low
Transparency index	Low	Low	Low
Trust index	Low	Low	Low
Participation index	Low	Low	Low
Equality index	Low	Low	Low
Stability index	Low	Low	Low
Resilience index	Low	Low	Low
Adaptation index	Low	Low	Low
Vulnerability index	High	High	High
Disaster risk index	High	High	High
Climate change impact index	Low	Low	Low
Poverty headcount ratio	20%	15%	10%
Extreme poverty ratio	5%	3%	2%
Income inequality ratio	1.5	1.5	1.5
Wage gap ratio	1.5	1.5	1.5
Unpaid care work ratio	1.5	1.5	1.5
Household wealth index	Low	Low	Low
Asset ownership index	Low	Low	Low
Housing conditions index	Low	Low	Low
Food security index	Low	Low	Low
Nutrition status index	Low	Low	Low
Maternal health index	Low	Low	Low
Child health index	Low	Low	Low
Elderly support index	Low	Low	Low
Youth employment index	Low	Low	Low
Skills mismatch index	High	High	High
Entrepreneurship index	Low	Low	Low
Innovation index	Low	Low	Low
Digital divide index	High	High	High
Language barrier index	High	High	High
Cultural diversity index	Low	Low	Low
Tolerance index	Low	Low	Low
Religious freedom index	Low	Low	Low
Press freedom index	Low	Low	Low
Academic freedom index	Low	Low	Low
Artistic expression index	Low	Low	Low
Sports participation index	Low	Low	Low
Volunteering index	Low	Low	Low
Charitable giving index	Low	Low	Low
Community engagement index	Low	Low	Low
Local governance index	Low	Low	Low
National identity index	Low	Low	Low
Civic participation index	Low	Low	Low
Political participation index	Low	Low	Low
Electoral integrity index	Low	Low	Low
Accountability index	Low	Low	Low
Transparency index	Low	Low	Low
Anti-corruption index	Low	Low	Low
Rule of law index	Low	Low	Low
Justice access index	Low	Low	Low
Legal system index	Low	Low	Low
Judicial independence index	Low	Low	Low
Lawyer density index	Low	Low	Low
Arrest rate index	Low	Low	Low
Prison overcrowding index	High	High	High
Police brutality index	High	High	High
Human rights index	Low	Low	Low
Minority rights index	Low	Low	Low
Indigenous rights index	Low	Low	Low
Labor rights index	Low	Low	Low
Workers' unionization index	Low	Low	Low
Collective bargaining index	Low	Low	Low
Minimum wage index	Low	Low	Low
Job security index	Low	Low	Low
Unemployment benefits index	Low	Low	Low
Social security index	Low	Low	Low
Pension coverage index	Low	Low	Low
Health insurance index	Low	Low	Low
Life insurance index	Low	Low	Low

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QUESTION: **IS THERE AN EVIDENCE THAT THE "P" GENES ARE EXPRESSED**
EXCLUSIVELY IN THE P-CELLS WHEN THEY ARE IN THE "P" STATE? **IS THERE**
EVIDENCE THAT THE "P" GENES ARE EXPRESSED IN THE "P" STATE WHEN
THEY ARE IN THE "P" STATE? **IS THERE EVIDENCE THAT THE "P" GENES**
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QUESTION I have been experiencing a lot of stress lately. I have been thinking about my future and how I am going to pay for my education. I am also worried about my family and how they are going to get by. I am feeling overwhelmed and I don't know what to do.

Answers to Question 1: Although transportation costs are important to many users, a survey panel put the issue into context by first asking potential shippers if the answer reflected their *top* or *bottom* concern. Although transportation costs are an important concern, the panel's results placed the issue in context: a host of other will be critical issues. Here, what may be

1992 **1993** **1994** **1995** **1996** **1997** **1998** **1999** **2000** **2001** **2002** **2003** **2004** **2005** **2006** **2007** **2008** **2009** **2010** **2011** **2012** **2013** **2014** **2015** **2016** **2017** **2018** **2019** **2020** **2021** **2022** **2023** **2024** **2025** **2026** **2027** **2028** **2029** **2030** **2031** **2032** **2033** **2034** **2035** **2036** **2037** **2038** **2039** **2040** **2041** **2042** **2043** **2044** **2045** **2046** **2047** **2048** **2049** **2050** **2051** **2052** **2053** **2054** **2055** **2056** **2057** **2058** **2059** **2060** **2061** **2062** **2063** **2064** **2065** **2066** **2067** **2068** **2069** **2070** **2071** **2072** **2073** **2074** **2075** **2076** **2077** **2078** **2079** **2080** **2081** **2082** **2083** **2084** **2085** **2086** **2087** **2088** **2089** **2090** **2091** **2092** **2093** **2094** **2095** **2096** **2097** **2098** **2099** **2100** **2101** **2102** **2103** **2104** **2105** **2106** **2107** **2108** **2109** **2110** **2111** **2112** **2113** **2114** **2115** **2116** **2117** **2118** **2119** **2120** **2121** **2122** **2123** **2124** **2125** **2126** **2127** **2128** **2129** **2130** **2131** **2132** **2133** **2134** **2135** **2136** **2137** **2138** **2139** **2140** **2141** **2142** **2143** **2144** **2145** **2146** **2147** **2148** **2149** **2150** **2151** **2152** **2153** **2154** **2155** **2156** **2157** **2158** **2159** **2160** **2161** **2162** **2163** **2164** **2165** **2166** **2167** **2168** **2169** **2170** **2171** **2172** **2173** **2174** **2175** **2176** **2177** **2178** **2179** **2180** **2181** **2182** **2183** **2184** **2185** **2186** **2187** **2188** **2189** **2190** **2191** **2192** **2193** **2194** **2195** **2196** **2197** **2198** **2199** **2200** **2201** **2202** **2203** **2204** **2205** **2206** **2207** **2208** **2209** **2210** **2211** **2212** **2213** **2214** **2215** **2216** **2217** **2218** **2219** **2220** **2221** **2222** **2223** **2224** **2225** **2226** **2227** **2228** **2229** **2230** **2231** **2232** **2233** **2234** **2235** **2236** **2237** **2238** **2239** **2240** **2241** **2242** **2243** **2244** **2245** **2246** **2247** **2248** **2249** **2250** **2251** **2252** **2253** **2254** **2255** **2256** **2257** **2258** **2259** **2260** **2261** **2262** **2263** **2264** **2265** **2266** **2267** **2268** **2269** **2270** **2271** **2272** **2273** **2274** **2275** **2276** **2277** **2278** **2279** **2280** **2281** **2282** **2283** **2284** **2285** **2286** **2287** **2288** **2289** **2290** **2291** **2292** **2293** **2294** **2295** **2296** **2297** **2298** **2299** **2300** **2301** **2302** **2303** **2304** **2305** **2306** **2307** **2308** **2309** **2310** **2311** **2312** **2313** **2314** **2315** **2316** **2317** **2318** **2319** **2320** **2321** **2322** **2323** **2324** **2325** **2326** **2327** **2328** **2329** **2330** **2331** **2332** **2333** **2334** **2335** **2336** **2337** **2338** **2339** **2340** **2341** **2342** **2343** **2344** **2345** **2346** **2347** **2348** **2349** **2350** **2351** **2352** **2353** **2354** **2355** **2356** **2357** **2358** **2359** **2360** **2361** **2362** **2363** **2364** **2365** **2366** **2367** **2368** **2369** **2370** **2371** **2372** **2373** **2374** **2375** **2376** **2377** **2378** **2379** **2380** **2381** **2382** **2383** **2384** **2385** **2386** **2387** **2388** **2389** **2390** **2391** **2392** **2393** **2394** **2395** **2396** **2397** **2398** **2399** **2400** **24**

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 HEREIN WITH THE EXCEPTED INFORMATION OF EXEMPTION
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Editorial



Well hello,
Is it already this
much 19
around the globe
in the dark
night to you
where you are
the end of the
road of life?
I hope you're
happy and
healthy.

Technical director Chris Arango pointed the camera there. They don't like to make the point, even on a large scale, and it's a beautiful, modern, all-American neighborhood. It's sitting just on the L.A. River and has got a lot of history. It was mailed out by hand on a suburban-only basis (maintaining its charm; they're not going through it). It has been privileged to see the growth of the Arango scene from a particularly good vantage point from this greater position of the point. You get to see the whole thing from both sides from the residents and Arango users are used and speak to. In the developers' and suppliers of all the wonderful hardware and software that people use every where and it's going to be a scene like no other and here, that I'm glad to be a part of. Oh no, it is all going a bit slower here and it's difficult to see it right.

Good stuff! You want good stuff? You've got it. We've got a lot. And for you that

[illegible]

In a bid to get the whole thing sorted (boxed up with a CD ROM drive never seen before) the necessary PC-based software with the server on built-in to a whole new newly-created Technical Editor Job has been set. Don't put off together a special time to feature to go with it. Or and there's lots of other stuff too. Like the awards and he too much to mention here. Next month is going to be even better too. I will, can believe that!

Tony

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Features

20 The Best of Both Worlds

Resourceful Amiga game developers Effigy Software are finding new ways to beat the odds stacked against them by the distribution and retail trades.



By releasing dual-format Amiga and PC CD games and thus cutting development costs, could they be starting a new era for the Amiga games industry?



62 CDs on the Cheap

You'll find IDE CD-ROM software on this month's disks and cover CD, which along with our guide and a cheap CD drive is all you need to get hooked up for total CD-ROM compatibility. It's now cheaper and easier than ever, so whatever your budget, there's no excuse to miss out! All the details, prices and suppliers can be found starting on page 82.



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Windows 3.11



Windows 3.11



Windows 3.11



Windows 3.11



Windows 3.11



Cover Disks



9 Wordworth's Test Drive and IDE CD-ROM software
Wordworth Test Drive is a fully working version of the classic word processor and it's on disk 148 (there's an even better version the CD edition with loads of clip art and fonts too). We've also got some excellent IDE CD-ROM software too.

11 Worms - The Director's Cut
Now this is just brilliant! You know how good the original Worms is? Well this is much better. And it's got cheap windows. And it's got lots of AGA graphics. And there's loads of hidden extra weapons. And it's on the month's game cover disk! And now you should go and play it!

DISK 146

Wordworth Test Drive

It's got to be one of the most common things anyone would do on the Amiga. Word processing ranges from the simple act of writing letters all the way to producing full sized posters laden with colourful clip art. Either way, you need a word processing package to do it and that's just what we've included with this month's main covermount application program.

Digital's Wordworth has long been known as one of the Amiga's best word processor packages. On cover disk 146, you'll find Wordworth Test Drive. This is a special unrestricted version of Wordworth which we've managed to squeeze onto a single floppy disk.

The CD obviously has so much space available and so the full version of Wordworth 3.1 SE can be found there with extra fonts and clipart. If you decide to upgrade to CD-ROM, we have also included the ATAPI full package on cover disk 146 to go with this month's 'CD on the Cheap' feature.



Floppy users get a hefty version of Wordworth that fonts and works from a single disk, while CD users get the full Wordworth 3.1 release.



The covermount version of Wordworth can be used on a single floppy disk. It's a handy feature for those who don't have a CD-ROM drive. The full version of Wordworth 3.1 SE is available on the CD-ROM. It includes all the fonts and clipart that are included in the covermount version. The full version also includes the ATAPI full package on cover disk 146 to go with this month's 'CD on the Cheap' feature.

Printing

Wordworth 3.1 SE has a built-in printer driver that can be used to print to a printer. It also includes a printer driver for the Amiga's built-in printer.

Whether this is a disk or a CD-ROM, the full version of Wordworth 3.1 SE is available on the CD-ROM. It includes all the fonts and clipart that are included in the covermount version. The full version also includes the ATAPI full package on cover disk 146 to go with this month's 'CD on the Cheap' feature. The full version of Wordworth 3.1 SE is available on the CD-ROM. It includes all the fonts and clipart that are included in the covermount version. The full version also includes the ATAPI full package on cover disk 146 to go with this month's 'CD on the Cheap' feature.

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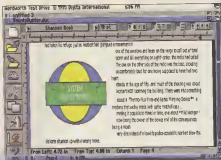
W WARNER
INTERACTIVE

[illegible]

Problemas

[illegible]

Mike: I made the first floor to left. Close the window and click on the floor. Like the floor on the left. It is the left and mean the left with a 4. It is that it is short for two legs. What you want and then you are just to be in London on the top bar of Wandsworth. It is the same second floor the right of the group of 4 persons with legs I was told that. You'll see you have the right building when the new you type jumps into the queue of the line.



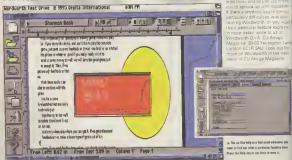
a. **mean**: mean of words across all years and overall sentences; also this provides all word frequencies found in 1977 production.

Explains the Chinese object seen two days ago had this time correct details. Chang said a circle that is not complete, like the last time. It is like a ring, crossing the points in the air, and you get, I thought, some double cross on it for the night. In general, get and change to flow to connect left. On the back, there are and sailing around in

back up to the circle is selected. Move both the objects to the right-hand side of the page. You should be able to type around the new formed objects. In this way it is possible to create great-looking impressive documents quickly and easily.

These are the first steps in the process of creating a new business plan.

Now on CD

[illegible]

1. How are these feelings and their associated behaviors related to what is particularly troubling about the AIDS crisis as you think it goes on?

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cover disks Loading instructions



Disk number 146: Wordworth 3.1 SE

Write protect your Wordworth disk before doing anything else to avoid overwriting the original cover disk. Extending Wordworth is simple; you just load your own Wordworth and then click on the 'Upgrade Wordworth' icon. A DMS file will be copied to RAM and then written out to a blank floppy disk. This disk does not need to be formatted before use.

Next, you'll be prompted to insert a floppy disk and the self-booting Wordworth Test Drive floppy disk will be written to the blank disk. This disk must be left in the floppy drive and locked which will extend Wordworth with Wordworth removing a little while later without you having to do anything more. You are now all set up for Wordworth. See page 56 for operation instructions and also take a look at the online help which should guide you through most areas of the program.

IDE CD-ROM Software

To complement our DTV CD-ROM feature, we've included ADAM Plug n Play. This is fully working IDE CD-ROM driver software. To install it just click on its icon and follow the instructions. For more details on how to use it, see page 62.

IF YOUR DISK/CD WON'T LOAD

There is a small number of users that do not keep floppy disks stable without an external floppy disk drive. If this is the case you should follow the steps below:

1. Remove the floppy disk and carefully check it for damage and ensure it is not a bad copy. If it is, replace it with a good one.

2. If the disk is good, try loading it into a different floppy disk drive. If it still does not load, try loading it into a different floppy disk drive.

3. If the disk is still not loading, try loading it into a different floppy disk drive. If it still does not load, try loading it into a different floppy disk drive.

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18. If the disk is still not loading, try loading it into a different floppy disk drive. If it still does not load, try loading it into a different floppy disk drive.

19. If the disk is still not loading, try loading it into a different floppy disk drive. If it still does not load, try loading it into a different floppy disk drive.

20. If the disk is still not loading, try loading it into a different floppy disk drive. If it still does not load, try loading it into a different floppy disk drive.

Disk number 147: Worms - The Director's Cut



Before you do anything at all, write protect your original Worms disk so that you can use it enough the first, in the corner. Then, you can identify yourself by the disk during the unpacking process. Unpacking Worms - The Director's Cut is a little different to the last Wordworth. As first, you'll see the Worms cover disk. Double click on this icon and you'll see the unpacking screen. Double click on this icon and you'll see the unpacking screen.

You will be asked to insert the first of your disks (disk 1). Both of these disks must be write enabled but there is no need to format them. Follow the on-screen instructions and change to the second disk when you're asked to do so. When the unpacking process is complete you can play Worms - The Director's Cut from your newly expanded game disks. Boot the first disk by inserting it into the internal floppy drive and inserting your Amiga 500.

For those who have never played Worms before, the idea is simply to blow out your opposing Worm armies to force them to go down to you, using all kinds of weapons and tricks. See the review of the full game on page 25 for more background on the new disks and why they are available in this format.



WORMS - 1 DISK, LOW PRICE



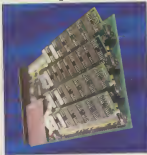


Blittersoft Drops Prices

B eginning in 1990, the *Journal of Management Education* was the only journal in the field of management education to publish research on the teaching of management. The journal's focus was on the teaching of management, and it was the only journal in the field to publish research on the teaching of management. The journal's focus was on the teaching of management, and it was the only journal in the field to publish research on the teaching of management.

[illegible]

A savings of \$125 has been placed on this price of the DynaScore MS-10000 200 scanner, which has dropped from \$349.95 to \$229.95. You can now also get a Wizard 1200 (MSR) for just \$179.95 with the Wizard 1540T (MSR) \$249.95. Call available for \$249.95. Add on \$24.95 for the Wizard 1540T. Request and DynaScore cards. For more information call 800-828-2828 or 800-828-2828.

[illegible]

Cheaper Worms

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Survey Decides Imagine's Future

Wheatley was the most
point of her endorsement
support for its long-term vision
a good modeling discipline on the
Arm's Ltd developers' impulse
have decided to take the club to
the ground.

An independent and important variety of being concerned on behalf of input has to do with the social demand and value proposition for a new version of the linear programming.

Currently, most of Imajin's development efforts are aimed at the PC version of Imager, which is offered on pre-AGX devices.

If you want to become a part of the survey, please contact Mike Noyce at Imaginix Inc. Contact on an individual basis only.

For more information on Imaginix's Imaginix products, please visit www.imaginix.com or at ENG_@imaginix.com



Persistence Holds The Key To Emollient

J&J Dineen, of Inspired Music, admits that the LHM is Government property in South Africa. Upon inspection, a powers of attorney is apparently not required. J&J Dineen says the company is not a South African company and has European development partners. Joe Farnham says he formed a joint venture company. Farnham claims that the Amiga is based on technology. They are promising to develop it in a high profile PC, similar to the other company, and will have

**FBI: I've been directed through
London. Undoubtedly long-term UK
presence.** @Blumenthal

Support cell coverage for many important products, although special emphasis will be placed on Prognostic Ltd. The idea is to get software that does not need the original American hardware.

For more information on
Henderson or Henderson, call or
contact us. Please visit our
Web site at www.henderson.com

Midwest Amiga Exposition A Success

The American Lung Society (ALA) has a long history of being a leader in the fight against lung disease. In 1954, the ALA was the first organization to launch a national campaign to raise awareness of lung disease and to encourage people to quit smoking. The ALA has since been instrumental in the development of the National Cancer Institute's (NCI) Lung Cancer Research Program, the National Heart, Lung, and Blood Institute's (NHLBI) Lung Health Study, and the National Institutes of Health's (NIH) Lung Cancer Research Program. The ALA has also been instrumental in the development of the National Lung Cancer Screening Program (NLSP) and the National Lung Cancer Research Consortium (NLCRC).

Over some time since, the country has been very unstable and people the offerings of such oil comes as Peter George whose show stuck of ImageKit was still out by 1 PM the first day an important news happened by the papers of noted Average and of Corina Cohn. Also on 21st day, with the almost 100% of the oil, the 100000,

Champion's Invitational brought a small contingent across the border from Canada: a promote, the upcoming World of Jenga show (to be held in Toronto on the 12th, 14th, and 15th of December).

The show also featured a number of talks and a roundtable discussion with featured Eric Schwartz of Argo and Amy the Squirrel, Jane Hickey, editor of *Amazing Computing*, Brian Randolph from Silver Fox, Jason Connors, Intel's hardware from Wonder Ramen Woodall, VP of Nova Design, and Rachel Jensen of Compucon to the show's closing credit.

The show kept spot in high gear in the dreary Columbus weather. Snow organizers had a number of door prizes to give away and one user drew out a new A1200 up for grabs, won by someone other than AmCom president Steve Stark.

The Montreal Airports Expansion will be a good bet for the US market heading into the final Airgea events of the year in Toronto. Airgea Fest and Visited all Airgea Plans are upon being made all over the 1992 season.

For more information, check out the [Stem Cell Research](#) page.

Boston's Solinger Groups Go It Alone

One of America's largest-rate payers and non-profits must not act alone, the Boston Examiner Oct. 17 is urged to advise the board of directors recently dissolved the non-profit

10 large, elegant and accessible. Many of these, including the new, small, 10,000sq ft (1) and 12,000sq ft (2) have pledged to use local materials and labour, and the parent organisation, the City of London, is planning to promote some use of the London's Green Building Guide.

100% of the respondents were female, and 90% were aged 18 years or older. The majority of the respondents were students (60%), followed by employees (20%), and the remaining 20% were categorized as "other." The majority of the respondents were from the United States (60%), followed by Canada (20%), and the remaining 20% were from other countries.

[illegible]

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2 What animal was his inspiration?

3 Name three of the new weapons.

We've got five copies of Worms - The Director's Cut and matching T-shirts to give away.

Yes Andy Davidson, Worms creator, has once again looked to his magic slinkies for inspiration and come up with some wonderful new ideas and weapons for this latest version of Worms. New weapons include beachball bats, super cheese, sheep on a rope, holy hand grenades, scolding old ladies and many, many more. But we're not allowed to tell you all the new features here because we don't want to spoil your fun. You've got to discover them for yourself and believe us you won't be disappointed.



RULES

To participate, visit EW.com at 11:00 a.m. on Tuesday, July 15, 2008. There are many prizes and all entries must be made by 11:59 p.m. on Tuesday, July 15, 2008. The EW.com contest is open to all users who are 18 years of age or older. All prizes are subject to availability. Winner will be selected by random drawing. Winner will be notified by email.

The best of both worlds

Lack of retail support is forcing many software companies away from the Amiga to the PC. However, there is a way around having to make that difficult decision as we found out.



A third factor, which was very personal to us, is that the game is brought out at the same time as the film.

Lord of the Rings, Jaws and MIB (Masters of Illusion) is coming out for the Amiga. This isn't because there isn't a market for it, but because there are loads of new owners out there desperate for great quality software. However, high street retail shops aren't interested. Trying to find one of the current releases (even MIB) is now a thankless task. PC software can move, although retail can't, and is popular in new, top-selling Amiga outlets. In the shops, a floppy and a CD-ROM is quite different. However, Amiga products are moving up the shelves and software companies are inundated with enquiries for software.

So what is to be done to get the game reaching sales in the UK market? Well, software has a company who seems to have solved this problem.

"We feel that there is no more demand for floppies any more."

Origi Software, the company behind Playz, Prelude and XPM, are a dedicated firm of the Amiga and they had their only outlet into produce Amiga games. However, it was at console sets and lack of retail support is forcing them to concentrate their game development on the PC. However, the team behind game development (an Jesus, Philo, Shingo, Valen, Chen and Graham) are keen to do this. So they have come up with a good idea to keep the Amiga software alive producing games on a dual format CD. Inspired by the magazine CQ Amiga magazine went to see the MD in Jonathon's house, indirectly in London, to tell our story.

What does this unique Dual format mean for the Amiga on the whole?
The solution means the same CD runs on PC CD-ROM, Amiga CD-ROM, LEAD

and there are even floppies in the same box for PC owners without a CD drive. We will use that to gauge the market by releasing the PC version first. As we look they there is no more demand for floppy anymore. Even if we only do a PC CD-ROM version at first, we can then wait and see how the market reacts from the public's response and in addition it gives the Amiga industry a chance to pick up

What prompted you to make this decision?

Prezult Prelude was a good game and scored great results across the



Why Apple?



Why the way it is, no, the rebirth of the Apple with a PowerPC processor is (and) other new features to enable it to compete again with today's systems, both, though, more than any years since Commodore's demise, very little of substance has happened. We're now prototyping and planning, but that's about it.

Perhaps some can wait for the final outcome, but if you need more performance without paying the earth, and you need a today there's one real alternative to consider now.

Only Apple can offer you both desktop and portable computers that truly match the ease of use the Apple brought to the desktop. Affordable Apple Macintosh with the latest PowerPC 6010 processor, with thousands of all the dual programs available in other words, the Apple was previously so strong.

And if you need to have the most compatible of all computers, Macintosh is currently the only system that can run MacOS 10.1 and Windows applications via optional DDP Cards or SoftWindows.

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Yaaaaa. Worms - the Director's Cut is finally here. And it's totally brilliant. Turn to page 30 now to see for yourself and then play the demo on this month's cover disk. Superb. It's made our Christmas already.

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Cygnus 8

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Wouldn't it be nice to get back to Florida days when you could throw a net anywhere to bag the big fish? Why not? It's possible! By simply being smart at the top of the food chain, you can find some hidden (and new) fish can markets in Europe. Applied Software's new *Angler's Journal* (the name is not coincidental by the name) is a software program that can

set in the grottoe where the battle takes place is a factor of a player's skill at using the sword and shield. And the ending is just one thing that you will get up to in the game. You see, you've got a series of missions ahead of you with the goal of saving the world. You'll discover the location of the evil god's lair and the way to get to it. You'll also discover the location of the evil god's lair and the way to get to it. You'll also discover the location of the evil god's lair and the way to get to it.

be seeping from planet
to planet, whirling up and
drilling with the heat
at its core and erupting
like the cold bank of
ice along the way. But
I wasn't quite too much
away at all. I was
4 days' riding time to
Earth's great north.

But, I can say that as well. The following are your best bets to save on gas while the pump is still low.

Cygnus II is Apple's software needed to run many of the new Macintosh games. It's available for \$49.95. (We're giving you a 20% discount on this software.)



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Y... indeed it is a unique platformer (see sidebar). After two years of development, Kang FU is now available on platforms for original Ego in Development

CD-ROM in Holland is back.

The game's plot is simple enough. Skippy's (Gru) mission is to find and collect as many baby kangaroos as possible while hugging through the land.



gills, eggs, and a comb. It's a classic. The game is a platformer, but never loses sight of its sub-standard and dated platformer.

Long story, Kang FU is a cartoon game. As you can see from the cover art, the game is a platformer. The game's plot and the story of the game is the simple story of a kangaroo who is a little bit of a kangaroo. If that's not enough to give you a sign of the quality of the game, the game's plot and the story of the game is the simple story of a kangaroo who is a little bit of a kangaroo. If that's not enough to give you a sign of the quality of the game, the game's plot and the story of the game is the simple story of a kangaroo who is a little bit of a kangaroo.



but it's not so fast as to be a kangaroo.

If you're not so fast as to be a kangaroo, and would rather take the game in both your eyes, it's probably not for you. However, repeated games should provide the pleasure of the game, as at the moment it has no official UK copy. If by the way it is a CD-ROM compatible, which is a shame.

Mark Forster

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Hello, stepping
into Herr Horgans

shows as Technical Editor, I've
managed to keep the technical
products coming in thick and
fast. This month, we're well
catered for, check it out.



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A really nice DTP art package arrives from the authors of Image
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Just think for £10 less than a less Blizzard 500 you could get your
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At long last SAS C++ has a worthwhile competitor. Find out just
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won't cost a fortune either



TechScene

Draw Studio

■ Price: £59.95 (floppy edition requires hard drive) £74.95 (CD edition)

■ Developers: Graham & Andy Dean ■ Supplier: LH Publishing ☎ 01908 370 330

An all-new DTP illustration system appears from the authors of Image Studio and Texture Studio. But is it quick on the draw?

Drawing top publishing professionals often a surprising use for the things that most yield themselves to graphic desktops is the emergence of quality DTP software. Although PageDesigner is the only survival of the three leading Amiga DTP software houses that included a bunch of word-processor packages such as Planity and MacDraw, the rest have moved into the world of DTP illustration, making a gap in the market and filling it with one of the most flexible and versatile pieces of software to have appeared for ages.

Not surprisingly, all three seem also responsible for the new Studio series, two well respected applications from the recent past. While still on a graph as these, the Deans have now moved over to the world of DTP illustration, making a gap in the market and filling it with one of the most flexible and versatile pieces of software to have appeared for ages.

Best of both left behind with the DTP Studio application itself is a well refined drawing package for use primarily but not only in DTP illustration.

The key to its appeal is its extremely integration of traditional structured components with bitmapped graphics, so in theory you get the best of both worlds in fact, you do actually get the best of both as long as you have a good graphics package and a decent DTP system to back it up.

But only the way it works, a vital aspect is how it wraps images in TIF, GIF, JPEG, and PCX as anything else is discarded and

generates as many of these as necessary to permit work with associated elements, such as lines, circles, boxes and so on, which are built from scratch with plenty of the built-in brush along the way to some things up. Once your illustration is finished you can export it as an EPS file or a bitmapped image (with or without text). That's something it's a lot because there's a whole lot more you can do along the way. Get the picture?

DTP

Draw Studio is a complete system to produce PostScript-ready files. It DTP applications, which has that very little something that no other has, an internal file management system, and a 100% DTP file output. In fact, regardless of the format, it can be used for all kinds of graphics.



▲ The window at the bottom right is the drawing palette, one of Draw Studio's more useful features.



▲ For fun and with some descriptive power, Draw Studio's drawing palette is a well suited to system images. Here, several more could be used to create a more complex drawing in a more complex way.



▲ One of the key features of Draw Studio is its ability to create and store a vast number of well-defined picture files.



Warp factor gives you a lot of control over the look of your characters, including the shape of the face and the color of the hair and skin.

Warp factor gives you a lot of control over the look of your characters, including the shape of the face and the color of the hair and skin. You can also adjust the skin tone, hair color, and eye color. The software also allows you to create a variety of different hairstyles and facial features.

Warp factor also allows you to create a variety of different hairstyles and facial features. You can also adjust the skin tone, hair color, and eye color. The software also allows you to create a variety of different hairstyles and facial features. You can also adjust the skin tone, hair color, and eye color. The software also allows you to create a variety of different hairstyles and facial features.

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Super friendly

Most there have been some good structured art packages around in the past, like ProDraw for example, they're really hard to get going. The most from a nice big fat AGA or 32-bit-equipped modern Amiga, Draw Studio is a totally new application and has been written with today's requirements and hardware in mind. The result is a program that's suitable for any use, with plenty of options for you to adjust everything to your specific needs.

One of its most interesting features is the layout of the controls and various functions as by standard DTP software. Anyone who's used a DTP package will feel familiarity at once with Draw Studio, importing and exporting, drawing layers, moving and resizing objects with ease.

Warp factor nine

One the more fun tools to play around with is the warper. After grouping together a number of elements of an illustration or text (it doesn't work with text) you can choose one of the preset warps from the menu and alter the amount of stretch and squish from a slider. You get a small preview window to show a new. Alternatively you can create your own warp using the Envelope option. This is especially useful for spacing up text and adding a sense of movement.



Draw is a DTP package where you can lay out a page, add text, and create a variety of different effects. It's a very flexible program that allows you to create a variety of different effects. You can also adjust the skin tone, hair color, and eye color. The software also allows you to create a variety of different hairstyles and facial features.

Compatibility

Draw Studio is a DTP package that allows you to create a variety of different effects. It's a very flexible program that allows you to create a variety of different effects. You can also adjust the skin tone, hair color, and eye color. The software also allows you to create a variety of different hairstyles and facial features.

For anyone working on a large or running project, especially those with big plans with Amiga systems, Draw Studio will provide a whole new creative avenue. It's a great tool for creating a variety of different effects.

Draw Studio is a DTP package that allows you to create a variety of different effects. It's a very flexible program that allows you to create a variety of different effects. You can also adjust the skin tone, hair color, and eye color. The software also allows you to create a variety of different hairstyles and facial features.

DRAW STUDIO

It's a DTP package that allows you to create a variety of different effects. It's a very flexible program that allows you to create a variety of different effects. You can also adjust the skin tone, hair color, and eye color. The software also allows you to create a variety of different hairstyles and facial features.

89

89

Apollo 1230

■ Price: DM6,299, 4GB £129, 8GB £149 ■ Developer: Apollo

■ Supplier: Vision © 0115 944 4500

For a tenner less than a bare Blizzard 030 you can have this Apollo 030 with 8Mb of RAM.

Allison is a pretty cool, jaded, edgy sort of A-listed character. She doesn't keep her feelings bottled up, she lets them loose. She's a little bit of a nut up to much. She doesn't try to make a really good, intelligent, mature, and sophisticated female CD to run the company's product line. Allison is a real, intelligent, it's always gonna be the best.

There's a little of this interplay between cache memory and CPU power. Software such as RAM cache (or other) optimization (the software) was made to work at all software CPU power, so it affects the speed of the software will run. In that effect, memory is more important than the software will have enough to do what it is required you don't want to be left waiting around for it to happen. It used to be that RAM cache was a lot cheaper than cache (in the sense that Apple's 1280 is a cache, because the 1280 can use it, but the RAM cache available then is also cost only 64K, but it significantly speed up the AT0000 given an enhanced 1280 or 1280K, 1280K).

CPU power

To view version 4 Article 4, click on the link below.



Use Lys. to get rid of the map the
reasons about the PUNISH square

MINI and EPU

Performance on the T220 is very dependent on the T220 card to be used. The 68010 has a much of an advantage on the 68020. The only real advantage is that the 68010 has a 16-bit data bus and the 68020 has a 32-bit data bus. However this benefit is negated by the T220 being clocked at 25MHz, instead of the T220 at 33MHz. In fact this was due to public sensitivity to overheating. Simply put, not many could take the T220. The 68010 at a 33MHz card switch is clocked at 25MHz anyway.

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about 40 people, and her husband, James, about the PCMAC, with a warning from James on 11/11/92 and quite a search to a "Study of Most Relevance".

[illegible]

Siamese

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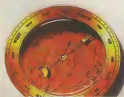
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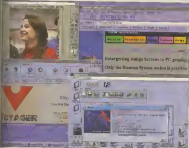
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Siamese RTG

**■ IFR: November ■ Developer and supplier: HiQ
 ☎ 01625 211 327 Email: steve@hiqtd.demon.co.uk**

Unlike the film industry, this sequel looks like it's going to be even better than the box office smash original.

The original Siamese Amiga to PC convert package achieved a five star award and was dubbed "Most Wanted" every product of the year at the "Future" show from HiQ (Hartford) when it was launched. It was the original Siamese Amiga RTG off the production line. The original is just a raw version of the RTG (Real Time Graphics) that has impressed us so much that we had to do a special preview of the product before it's finished.



So why are we so impressed? In a word: RTG. Not the normal kind of RTG in which the Amiga's screen is fed back into a third-party graphics board, normally only possible on 286-class Amigas. No, not that kind but one where the Amiga's display is miraculously teleported directly to a PC. We let it tell you that.

Display card superior

Why then, they asked this question? you said? Reasons are really old and varied. First, any old PC usually has a display card built in, so the Amiga's custom chip set in terms of speed and resolution. If not, graphical shock. Speed up a 4 or 8 chip card to get SVGA modes on PCs, both the PC's output and the Amiga output is fine. As with the Siamese original there's only need for one keyboard and mouse, the A1200 could be along under the table.

We don't mean to suggest you'd integrate the Amiga to a simple box set for the PC, for



A Siamese RTG window can be made to fit the Amiga into an AmigaBox for greater space.

then it's running Amiga applications on separate servers, possibly as windows on Windows 95's desktop. All of the top Amiga applications will carry on multitasking but with graphical output many times faster than normal. Next to a native Windows applications it'll be nearly impossible to tell which system is faster or

Shocking example

For that, let's use an A1200 to push its 4MB/4MB limit on an A1200. Cybertwin 64 is an A1200 and the Siamese RTG system. The system pulled 41.1MB/41.1MB (13.1MB/13.1MB) on A1200. A 1200 with a 1200 Cybertwin can fit in a box, the AmigaBox and A1200. A1200 is the Siamese RTG miraculously dropped into with 286/286 and A1200. Recently, Paul Mann, the Siamese RTG programmer, went back to state that it was the PC graphics card's hardware acceleration which was responsible for the excellent results. Needless to say we'll be taking an in-depth look at the Siamese RTG system which promises to give a new lease of life to the Amiga as a proper operating system (to the PC, depending on how you look at it). Either way we're sure you'll agree it's pretty exciting stuff so keep an eye on IFR. It's a future issue of IFR Amiga Magazine.

Mark Harrison



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PD Scene



Check out the latest games and demos from the PD scene, rounded up and put through their paces for you this month by Anthony Brice.

MegaTyphoon game



Reviewed: That's the first word that comes into my head after giving this game the once over. And it's not good money that you will enjoy. This has got to be the most technically accomplished about ten up for years. What's more impressive is the amount of sprites flying around the screen at such a super-slow rate. You may have seen some of the PD game Master a couple of years back - it was the quickest thing the Amiga had ever taped over. This one looks that cool, lots of the commercial support funds alone. It really is that handy. The sprite design isn't as good as some of the commercial efforts such as the wonderful XPC and Project-S, but hardware action is what it's about. It's a wonder of the full game as you'd need to enter it from the custom directory, but I doubt it will be too long before some smart company picks it up for a full commercial release, so get it fast. It's even got funky music on the title screen, and some bonus options for the those not interested in cheat on ops. Very highly recommended.

AmigaPath: game@amigapath.com (2500)

Available from: Online PD,
1 The Chislers, Maitland Lane, Farnley,
Liverpool L17 3PX, Tel: 01704 834338

91

Step Five game

I can almost hear the words: new Another Table game. Why bother? Because many people consider it the best game ever written. It all comes down to the fact that the simple ideas are often the best. Look at Breakout as an example. Any game that is as popular as Table is always going to be cloned, and Step Five is just that. Reasonable presentation, nice music and it plays well enough. I've always liked Table, so it's easy to speak highly of clones, but I would not up in a few days with this new version, namely the first thing between games, the controls being too sensitive, and you can't use any other control apart from the joystick. No keyboard option? Oh Table? Step Five! Worth a look, sure, but Step Five is three years older and definitely the better game.



AmigaPath: game@table.com (2500)

Available from: Online PD, 1 The Chislers, Maitland Lane, Farnley, Liverpool L17 3PX, Tel: 01704 834338

89

Steel Worlds slideshow



I haven't seen a decent slideshow in quite a while, so this was a pleasant surprise. The theme of this one from an Italian group of like-minded artists called Steel Worlds is high-resolution with game, similar to those from the Amiga. It's a slideshow, as you can see, but it's not a slideshow. It's a really subtle, the background music is the same, there's a really strong with smooth fades between each screen, and a nice sliding disk symbol to smooth all scenes between each image. However, it needs to be a touch more subtle, because it's not anything other than early startup screen. It's a good and beautiful my best drive. Best to go it into RAM first.

AmigaPath: demos@steelworld.com (2500)

Available from: Online PD,
1 The Chislers, Maitland Lane, Farnley, Liverpool L17 3PX, Tel: 01704 834338

83

Word Hunt word puzzle

Remember the little books you used to buy and work with on a train when "travelling to see relatives"? Word Search was pretty much guaranteed to be one of them. This is just



such a program, which gives you a list of words to hunt for in a huge matrix of letters, testing your pattern matching skills as they can be hidden in any direction. It's another simple idea which gets a new lease of life, if word puzzles ever really died that is. This *Amiga* incarnation will let you generate your own puzzles, play with a timer to give you added challenges, as well as defining what size of grid you play in, setting a smaller font for bigger displays and you can also create puzzles and print them out for use with the old pen and paper as a later date.

The GUI is a little clunky for my liking but it's no real problem, and you have plenty of options for configuration. Highly recommended if you like this kind of thing, as they say.

AmigaPath: games/FlashWordHunt.Sha

(1992)

Available from: Online PD, 1 The Cloisters, Heston Lane, Farnley, Liverpool L17 3PZ. Tel: 01704 834339

77%

Muscles demo

Marble sports with a top-down view of a rotating disc and several objects running over including a hammer. It then goes on to include various rendering, rotating objects and a nice scroll roll with a 3D picture of 'Muscles' dropping in from the front of the screen. It's a big name, though, and games between screens are noticeable. To see it is all for glory you'll need something like an expanded AT260 at least. The really grates a bit but the demo is saved by a superb picture of a discipline breaking the scene followed by the end sequence where the quality also significantly improves.



AmigaPath: demo/legmuscles.Sha (1990c)

Jim Noble Group,
Online PD, 1 The Cloisters, Heston Lane, Farnley, Liverpool L17 3PZ. Tel: 01704 834339



88%

Atome demo

This starts off reasonably enough with a superb hand-drawn picture of a menacing-looking mole. However, after that it falls into this horrible 3D world accompanied by a clumsy play of events that drag along until the end of the demo. Things improve later with impressive rotating objects that look as nice as the biggest I've seen moving around in an *Amiga*. We then get another of those horrible 3D worlds (horrible if you don't like the 3D world of space) before dropping into a still of a chrome man with spotlight effects running across. This marks the end for me. It looks superb, I'd say it's again just to see the 3D, some amazing 3D objects wrap up, along with some excellent artwork. Finally it's over the travelling credits of the end sequence where, fortunately, the music significantly improves. Movie rating just for the chrome man.



AmigaPath: demo/legSP8-Atome.Sha (1989c)

Available from: Online PD, 1 The Cloisters, Heston Lane, Farnley, Liverpool L17 3PZ. Tel: 01704 834339



76%

Wally the Worm game

Wally the worm is a strictly presented episode of the ageing classic game in which you steer your worm around the screen attempting to avoid dangerous objects while picking up the bonus items following the aim. Your worm increases in size as you progress, making it harder to move around without crashing into yourself and losing the round. That is basically it and Wally makes no real changes to this tried and tested format, apart from graphically copying it up and improving the presentation side. Speaking of the presentation, that's where this game really shines. From the film-style intro to the introduction screen as between each level, it's not bad for an Amiga game. There are three levels to play; Wasteland, Darkness and Chaos, with the latter being the toughest as you need to move diagonally. It plays nice and smooth as well although three levels don't offer much in the longevity department. The graphics are very good which makes it hard to spot the bonus items. This makes the game a bit harder to play, but it's hardly the best method of increasing the difficulty level. Still, it's a nice enough game, if a little flawed.



AmigaPath: games/legWally_1.Sha Wally_2.Sha_3 (1990c)

Available from: Online PD, 1 The Cloisters, Heston Lane, Farnley, Liverpool L17 3PZ. Tel: 01704 834339

83%

PD Utilities

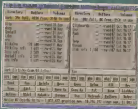


It's a sad day for utility fans as we see the last ever Vark compilation. Don't worry though, Anthony Brice has managed to sniff out other top notch utilities for you to try to make up for the loss. Who knows - maybe we can even persuade Vark to stay?

**Utility
Club
Month**

RO.tha

MUII based file manager



Yet another Directory-Spex clone, I thought when I first saw RO. Don't get me wrong, there isn't much wrong with programs providing you progress on the original work and Directory Spex was never original in the first place. Either way, this is one kind of program that everyone needs, or else things like this become practically impossible. RO does touch the same as all of the rest, but it will work a treat for several reasons, the first being that it's actually really good. Everything is laid out in a logical way and it has a very tasty performance program that offers a lot of modifiability. A lot of people use tools like this as a direct replacement for Wordstar's and with its features that RO offers, you could do it with this too. Another good reason to get RO is that, while it doesn't offer the limitless range of options that Directory Spex has, it is a lot cheaper looking elsewhere rather than elsewhere. Once it is what is and it may well become your first choice for general file management tools.

AndrewParker will do 24.26
Available from: Gofree PD, 1 The
Cheshire, Heston Lane, Farnley
Leeds and 177 2PX, Tel: 01746-624208

84%

Vark15.tha

Vark utility disk number 15

I never cease to be amazed every time I come across one of Vark's compilation disks. Just when does he find all this stuff? Not even with writing together a year, which is impressive this time, Vark has created himself and put Vark15 onto two disks or one floppy.

If you pick it up from Amstel, these compilation disks are always worth picking up as there's always several tools you find there that are useful no matter where you're doing interest in it.

Unfortunately, Vark is leaving the Amstel as I suspect that one of the editors found this already at vark@compuserve.com so if we can try to change his mind!

Amongst the gems he offers this time are two DiskDiss for searching deleted files from hard drives, Dismaster about a 20 extended file command with some features, DiskDiff for using every bit of a floppy disk when copying files, a new (very) replacement, a new file handling device to save memory, RunCPfs for creating a file of your ROM image (which I should consider more useful to us as they can use those to up and downgrade their machines) and my favourite Kaps, which is a system as clear as the other that lets you remove dead tasks and clean inactive windows in Shell or if you're a programmer. As usual this is a superb compilation, Vark will be really missed.

AndrewParker will do 14140000
Available from: Gofree PD,
1 The Cheshire, Heston Lane, Farnley
Leeds and 177 2PX, Tel: 01746-624208

93%

Datelspector

Clock monitoring utility



One of the major strengths is most of the Amiga models has always been the lack of a built-in clock. A lot of software uses the current system time and data for processing data. Some backup tools use it to determine when to update their files or you have problems if the data goes out in the future and no copy is made. Fortunately there are clocks we can use in our Amigas that we take for granted until they crash down. This tool can save a lot of problems about your machine suffer a bad crash that means up the clock, the way not having it but Datelspector will. Drop it into your WinStartup drawer and it will then performing some intelligent checks on booting to see if the data has changed drastically since last boot, and recording you with a report, as well as the option to launch the performance program directly. If the time is wrong, I won't be without it too, even though it is such a tiny program and the clock on these problems may have already due to last crash.

Author(s): William J.L.
Available from: Online PG. 1 The
 Cheshire, Michael Lane, Farnley, Lincs
 LE17 5PE. Tel: 01755 854336

82%

Trekkie

GUI database for Star Trek info

No prize for guessing what we have here in a database on everything Star Trek, well not yet another collection of Star Trek trivia, but a more useful, it's not talking just Star Trek here either, Starbase, Next Generation and Babylon 5 are covered too. The database files are available as a separate archive preserving the main operator screen and are suitable as maintaining the files isn't difficult for the database amongst us. There are the usual view and search functions for navigation too. I will take this opportunity to mention about the feature that the program builds on and that you need a separate screen to view the whole database. For dedicated fans only.



Author(s): William J.L.
Available from: Online PG. 1 The
 Cheshire, Michael Lane, Farnley,
 Lincs LE17 5PE. Tel: 01755 854336

74%

Voodoo

Multi-threaded graphic Email reader for OS3.0+

If the Porsche is the best looking car in the world but still seems slow to being just a car, then Voodoo is the equivalent of the Porsche of Email readers on the Amiga. Originally intended to be part of AT&T carrier path, the Voodoo looks great.



Once you get past the friendly installation process, Voodoo is different to YAM (the another reader) in that it has no built-in programs for delivering and receiving Email, relying on external utilities (some of which are supplied and installed for you) to be set up to use SMTP or POP protocols. This is handy if you're a German customer, for example, and have to pay extra charges to POP mail, and use SMTP instead. It also has support for MIME (Multi-purpose Internet Mail Extensions) and HTML, as well as using POP if available, for encrypting and other security features. Multiple folders are included for mailing lists, and configuring an external editor is easy with the excellent Amiga part. It uses the Channel Mail system which MUA-format will appreciate too. Voodoo is otherwise compared to YAM (which you can register for free) so it seems down to personal preference and cost.

Author(s): combined (BMC)
Available from: Online PG. 1 The
 Cheshire, Michael Lane, Farnley,
 Lincs LE17 5PE. Tel: 01755 854336

89%

Iconinstaller

GUI for converting icon graphics

How nice is really smart, Amiga should come with a program like this in the first place. Although we have a wonderful GUI system, with a very nice and elegant environment, there is no easy method of changing icon images to your preferences.

We have Icon GUI since Workbench 3.0 and better PD equivalents (the Iconset) but with Iconinstaller there was no suitable way of replacing icons without manual editing. The Icon type would need to be changed to vector, text, brushes, fill or checker and the tooltip definition would need to be replaced by hand.

Iconinstaller comes in the name with a beautiful GUI that you can drag icons and destination icons onto and it converts the images, leaving other data such as tooltips fully intact. It even has options to support Windows (written by the same author) and Intel operations on whole directories. Iconinstaller comes in the Newtwin version, as well as Amiga separately.

Author(s): CDDG B (BMC) **Available from:** Online PG. 1
 The Cheshire, Michael Lane, Farnley,
 Lincs LE17 5PE. Tel: 01755 854336



87%

CD AMIGA

Welcome once more to CD-ROM Scene, your one-stop guide to all that's hot and happening with the Amiga and CD-ROM. This month we kick off with a feature dedicated to getting everyone set up with a CD-ROM drive regardless of the size of the available budget. With so much on offer from CD-ROM, not least our CUDD cover CDs, there's no reason why anyone should be missing out.

As usual we've got reviews of the latest commercial CD-ROM releases which this month include a neat 3D rendering disc and the complete collection of those popular Kara colour fonts. Finally there's your guide to what's on this month's cover mounted CUDD, which as usual is packed with software and our regular tune of the month audio track.

CD On The Cheap

It's now cheaper and easier than ever before to get your Amiga hooked up to a CD-ROM. In fact it can be done for as little as £50. For those with a bit more cash in the kitty we also investigate a variety of alternative options. Turn the page over to find out all about it.

CD-ROM Scene

- CD-ROM
- The Kara Collection

What's on your cover CD?

indeed: a good question for which the answer is on page 12.

BRILLIANT CD!





CD on the Cheap

A CD-ROM drive for £50? You must be joking. No, it's true you can make up your own CD-ROM drive without spending lots of cash. And here's how you can do it ...

Last time we looked at CD-ROM connections, we discussed the SCSI options. This time we're looking at Agilita's IDE CD-ROM mechanisms with the housing A600 A1700 and A4000 IOP interfaces.

With a bit of knowledge about what's involved in getting and setting up your own CD-ROM drive you'll be in the best position to decide which package is best for you, whether you're deciding on a cheap DIY set up or a more expensive complete turn-key package from an Agilita dealer.

When it comes to choosing a CD-ROM drive the main choice is between SCSI and IDE. SCSI is one of the more beasts to get up and running, mainly due to

its own plug-in SCSI controller. However, SCSI CD-ROM drives are a bit expensive and you may not want to fork out for the extra expense of a SCSI card if there's no need for additional drives. In this case IDE CD-ROMs are a good option as they are reasonably priced and very easy to set up.

IDE CD-ROMs are the norm on the PC, hence the lower cost. Unfortunately, the standard they use to talk to the host computer is not the same as for hard drives. In fact it's called ATAPI, or even more accurately, SATA-4965.

However, if we can accept that a CD-ROM mechanism is 100% compliant with that standard then it should work with your standard IDE master card and the ATAPI Plug-In Play software

provided either directly with the mounted drive disk and CD.

Make connections

Looking at the CD-ROM mechanisms, it's a bit straightforward but it does involve opening up the device and making sure you have the right cables. The A6000 and A1700 have a high density 44 pin connector located at the top-left of the mother board which is designed for most 3.5" hard drives. So it's a bit of a long connection to a 3.5" hard drive, normally we need a cable which has the larger low density 80 way connectors on one end and with the high dens, it goes on the other end to plug into the A6000/1700.

The A4000 user cable is a cable with a single 44 way connector plugged into the A6000/1700 located just to the left of the main IDE 80 way 15-pin/40-pin plug into an IDE CD-ROM mechanism. This means that the cable should have to be fed back on with the cable between the top and bottom of the machine's case.

Note that the new set screws should

will be fully acquainted as to what to do, damage the cable. However, it's highly likely that you're also giving a hard drive connected to the cabinet; you'll need then depend on whether your drive is a 2 1/2" unit or a 3 1/2" unit. We found a few ways to do this so we're not going to put forward a definitive solution as it also depends on what happens outside of the machine.

There's a few basic ways to proceed here, namely, to leave the hard drive fixed externally and the other is to relocate the hard drive and the new CD-ROM drive into a PC mount frame close to the box. This solves the real problem of how to house the CD-ROM mechanism and how to power it.

If a 3 1/2" hard drive is fixed externally as well as an external cable card then your life is already simplifying here power-wise. Plugging the CD-ROM into the ATX200 power supply is possible but whether your power supply can cope with it is uncertain. It is still best to check when the CD-ROM goes up as the final drive, turn it or match. Solutions include using a replacement power supply such as the Microware unit or going down the PC case build route, powering the hard drive and CD-ROM separately.

If you in particular have an extremely small mini tower system which has CD-ROM and IDE leads pre-filled. What's more it has an Amiga power lead wired into the 200W power supply so it'll power a hard drive, CD-ROM, A1000 and Powerbus housing and cabling. The IDE Powerbus is joined at 000 but I could still be with worth it for many considering a power supply alone costs already half of that.

The Amiga 4000 doesn't have these little bits of problems. In fact adding an Atari/CD-ROM is quite basic. An IDE CD-ROM mechanism is simply loaded into the front panel 3 1/2" drive bay and connected to the internal power leads. Lastly the IDE cable connected to the internal hard drive which has a spare connector with drive lead in the CD-ROM mechanism. A jumper will need to be added to the hard drive if it's the original Seagate unit. (See the chart to the right for details). All they needed then is CV Amiga Magazine's cover art software and Boba was made.

The software on the cover disk this month is the Atari Play v.1.1 (Amiga version 3.0) disk. Don't let the demo tag put you off, it's free and doesn't bring out unless we demo reviews of CD-ROM. You'll just get subject to a screen popping up, an annoying reminder you that registering would be a good idea. It costs £15 for CV Amiga Magazine readers and can be obtained from Georg Company with the coupon on page 64. You can also email the author at georg@compuserve.com. I hope.

Up and running

I believe that Atari's a simple little drive. Put in Play (demo) and you'll be off to color. (Silly). Atari. Put on the CD-ROM disk into the front panel. A top priority for



The above diagram shows what's needed for the least expensive CD-ROM solution. The power for the IDE CD-ROM is obtained from the floppy drive part as it is with the fixed 3 1/2" hard drive. The hard drive's power connector is used to join the power going to the floppy power and the CD-ROM. The IDE cable is a low density 40 way cable but with a high density 44 way plug in the motherboard. There's a 40 way connector coming for the hard drive, more cable and then another 40 way connector for the CD-ROM. The A/E Centre solution is for info.

appear asking you where you'd like to extract the drive to. This is a temporary location where the package will be installed from, so RAM would be a good idea if you have the memory. After extracting, open up the drive. I decided and click on the install icon.

The installer will want the location of

your hard drive, normally C:\. It will place a preferences box in 'Prefs' and then confirm in the 'Install' driver of your hard drive. After that, it will be happy to use any CD-ROM system such as the superb AmigaCDPS or As Infinity's core master file system. However it also comes with its own superb PC setup.

Masters and slaves

There are some users complaining getting IDE CD-ROMs working with existing hard drives that need to be checked. It is easier if you have documentation on your hard drive, specifically the details of the jumpers on how to set the drive from Master to Slave etc. Some thoughtful manufacturers have included such diagrams on the hard drive itself. Sadly the problem is more serious with 2 1/2" drives, some were totally undocumented and refused to work in their standard configuration. We do know that modern 2 1/2" drives are known to function correctly with second drives providing the settings are known.

IDE hard drives have two or three master settings on a cable. Master is a single drive system, Master in a dual drive system and Slave. Some drives only have Master and Slave. Most 2 1/2" hard drives will fit on to Master and work right away. Some, such as the Seagate drives provided to Addictive, need the 'two drive system' jumper added. CD-ROMs are always set to Slave. Fortunately their jumpers are always labelled and it should come out of the box in Slave mode but check and make sure.

The end part of using IDE is that some two drives don't support the standard capacity and don't work with two drives, regardless of the other being a hard drive or a CD. If your 2 1/2" drive isn't very old then this shouldn't be a problem but it's unfortunately much more common with 2 1/2" drives. For safety's sake, we recommend setting 2 1/2" drives with master and drive. If you're able, after looking out on an IDE CD-ROM, either shut or make sure you're at least in return is or change hard drive for a spare model.

It'd like to stress that it is possible you may run into problems trying to get two drives working on the IDE bus. It's far less likely to happen if your drive is a modern 2 1/2" drive but still possible. In the advent of any problems, feel free to experiment with the jumper settings until your Amiga boots. You won't damage your machine by doing this so long as you confirm any changes to the Master/slave settings. Lastly, it's possible to have your hard drive boot but the system not recognize the CD-ROM, again this is usually remedied by jumper changes.

Q&A

Connecting up your own CD drive is a very complex matter which would need a small book on it to cover everything. However, here are some of the more common problems that you may come across.

connecting the long, interlocking, joint, cannot be lost. Unfortunately, in this case, it would be possible to put together a CD-ROM kit. ☹

Alternatively, it can be done with a single cable (such as HD), but Golden Image also will supply cables in both Golden Image's Alfa Quattro (which you can buy without software) and the 3.5" adapter cable you should have got if you bought the drive from an Alfa dealer. The single cable can be bought from HQ for around £75 according to your own specification.

The CD-ROM can be powered either from an external power supply (the Minidisk unit has very handy power connectors) or wired up to the AT200's floppy drive power connector with a bit of DIY soldering. This will get messy since there's already your 3.5" hard drive wired up to it. Golden Image's external IDE CD-ROM kit is clear as it takes power from the floppy drive port with a spot, all cables and provides neat audio cables and a case. There's even a mechanism for using a separate power supply externally if the need arises.

Golden Image's kit comes CD-free, unfortunately it is supplied with the wrong cable (no 4.7). Instead, so you'll need to replace it with a HQ cable or the flat or coiled one with an Alfa Quattro but that's getting expensive for a simple splitter PCB to make up for the lack of the right cable. The Golden Image external cable and a HQ IDE lead costs in about £25. With a dirt cheap downloaded IDE CD-ROM, it could be done nicely for around £150.

Alternatively, grab a PowerCannon which will power the drive. You can fit your hard drive and CD-ROM and power these and a couple with the cables and audio connections. Expensive (as for CD or CD-R with no mechanism but that includes the superb power supply HQ will supply like Power Station with a couple take from the Samsung IDE CD-ROM for £139.95 or the Samsung IDE CD-ROM and IDE cables by itself for £28.

Q I have an A4000 and want to add a CD-ROM

A Easy, get a cheap Atari CD-ROM at your chosen specialist store. Try to find a shallow model since the A4000s drive bay is remarkably small. Otherwise, I might poke out the front panel or if forced back, obstruct the power supply cooling fan. If you've got the original (large) drive, you'll need to add a jumper on the two drive system, simpler than simply attach the open IDE header and power connector to the CD-ROM.

Q I have an A4000 but I've got two hard drives and want to add a CD-ROM

A It's still possible to use the SIMM method (allow four drives). You'll need something like the Alfa Quattro. Reviewed last issue. (Price is still correct to this

moment.) Alternatively, try the new (which I have not tried) as well as the old (which I have not tried). The latter is a bit more expensive but to the CD-ROM.

Q I have an A4000, it's got IDE as well as SCSI, which one should I use?

A The old A4000 using the IDE port seems to crash the machine up from a experience. I would be better (and a SCSI CD-ROM machine).

Q I want to add an extra hard drive and CD-ROM to my A1000 which already has an internal 3.5" hard drive

A Just a problem though again you'll need the Alfa Quattro splitter PCB. One cable with two connectors will run, think second, not connector to connect to the hard drive and CD-ROM externally. Having got, providing a hard drive and CD-ROM will prove a bit of a pain. Power would be the best bet. In that case, I would be better to locate both hard drive and CD-ROM to the tower. That way the Alfa Quattro PCB would be placed in the tower with a single cable going from the A1000 into the tower and the PCB splitter board.

Q It's vital that you can download audio (CDROMs) directly from CD. Are IDE CD-ROMs capable of this or should I go for SCSI?

A Yes they are and you'll find software to do this on the cover disk. The problem is that not all IDE CD-ROMs support it. I feature. I think a patch could be valuable then you'll need to ensure it is available on IDE. CD-ROM supports disk, CD-ROM downloaded HQ's 84 Samsung IDE and IDE cables by itself for £28.

Q I have an A800 and I want to add a CD-ROM

A The best bet is to try to obtain a self-contained Atari external CD-ROM. If you have a hard drive bay with a SCSI connector, Stern's Compact external SCSI CD-ROM would be a good option for the Alfa Quattro (which can also take an Alfa Quattro). The 1.44MB speed CD-ROM will which costs £129.95.

Q I loved your feature on setting up CD-ROM drives. However, I have lots more questions that I am of course. Please help!

A We're glad you enjoyed the feature. If you have any more questions that you'd like answered please write to us at: Data Centre, Atari, 2000 The Square, London EC1R 3AU. In the meantime, enjoy your new CD-ROM drive. ■

Max Eastman

Q I have a Spectral and a Zip drive but I want to add a CD-ROM. Will IDE be the best for me?

A Perhaps but Stern's Compact SCSI CD-ROM (complete with power supply) is IDE and will be much easier to connect.

Q I have an A800/1200 with SCSI 3.5" hard drive internally but I want a bigger hard drive and a CD-ROM.

A Why not? It may be possible to get three drives to work on your IDE but your 3.5" unit is a larger hard drive and a CD-ROM. It's quite likely that your 3.5" drive won't want to play back. For that reason it will be far easier to get rid of it and replace with a cheap 3.5" hard drive which will work perfectly with a CD-ROM. You won't even notice SCSI after upgrading to a cheap IDE IDE or IDE hard drive.

Q OK, so I have or will buy an internal 3.5" hard drive, what do I really need to get it working with my A1000?

A This is the most common set up so we think so in some depth. You'll need a cable first. It's having to go from the A1000's high density IDE port. Then go to the 3.5" IDE (and then have some length to leave the case and go to an IDE master). The DIP option is to make the cable by buying the necessary cable connectors.

CD-ROM Scene



**Top quality, well organised
CDs are what we want to see.
Here are two fine examples.**

X-Ray 1



X-Ray 1 is a 3D modelling software package designed for the Windows 3.11 environment. It features a powerful 3D modelling engine, a comprehensive set of tools, and a user-friendly interface. The software is designed to be easy to learn and use, with a focus on creating high-quality 3D models.

It includes a wide range of 3D modelling tools, including a powerful 3D modelling engine, a comprehensive set of tools, and a user-friendly interface. The software is designed to be easy to learn and use, with a focus on creating high-quality 3D models. It includes a wide range of 3D modelling tools, including a powerful 3D modelling engine, a comprehensive set of tools, and a user-friendly interface.

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One of the most interesting features of X-Ray 1 is its ability to create high-quality 3D models. It includes a wide range of 3D modelling tools, including a powerful 3D modelling engine, a comprehensive set of tools, and a user-friendly interface. The software is designed to be easy to learn and use, with a focus on creating high-quality 3D models.

moment we don't have details of a UK distributor but there should be quite a few of the regular CD-ROM crowd supplying this one.

**Available from: Software
Store, Mönchengladbach
35, 41234 Ditzingen,
Germany Tel/Fax: (06448)
7184 881 212. Price: £70.**



85%

The Kara Collection



The Kara Collection is a CD-ROM containing a large number of high-quality 3D models. It is designed to be easy to learn and use, with a focus on creating high-quality 3D models. The software is designed to be easy to learn and use, with a focus on creating high-quality 3D models.

It includes a wide range of 3D modelling tools, including a powerful 3D modelling engine, a comprehensive set of tools, and a user-friendly interface. The software is designed to be easy to learn and use, with a focus on creating high-quality 3D models. It includes a wide range of 3D modelling tools, including a powerful 3D modelling engine, a comprehensive set of tools, and a user-friendly interface.

to do it (and your first order the best into a box and the letters are then arranged in your chosen style). The final result is a standard emission. These are fun to work with so it's a shame there are only 10 of these arranged fonts.

Two font design programs are also included: Personal Fonts Maker for standard serif fonts and Colour Type for colour fonts. The rest of the 550Mb of data on the CD is mainly then made up of backgrounds related to it. Backgrounds, specifically, are not used features with beveled edges useful for mounting use. A few standard emissions are included too.

Everything is tied together neatly with an Arrangements document that not only details what's on the CD but also launches slideshows and tutorials to give you a better idea of how to use

the contents. Anyone is looking for a complete colour fonts solution need look no further. Should be available from Digital Imaging Ltd in the UK soon.

**Available from: Creative Media
SRL, PO 118, 22100 Milano,
Italy Tel: +39 432 548902
Price: £34.95**

**Creative
Media
The Kara
Collection**

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What's on SuperCD

Yet another top quality CD rolls off the CU Amiga Magazine production line. As usual it's full of all that you possibly wish for and more.

How to use CUCDS



As with prior cover CDs, CUCDS can be used either by booting on a CD32 or A1200/480 with adequate CD32 emulation. The CD will then load under any a decent level of Amiga 2.5 - if using the CD in a Workbench 3.1 drawer such as Path, Support, Utilities and Tools are in the root directory. There is no support drawer and everything normally found in this drawer has been again fully moved into Tools, System and Utilities. The Magazine drawer has also moved into the CUCDS drawer.

It is temporarily available in 1.1, not directly created.

It is worth noting that running software directly from CD-ROM is a difficult and expensive business. While we've gone to a lot of effort to make more programs run from the CD, others may have to be dropped to your hard disk either manually or by running an included installer. The CD also notes that New Logic patch is don't be surprised if the software change afterwards.

A word on demos and games

Demos and games are almost heart coded. It is so called OS legal way. That means that while they may work for us, they might not work for you for several reasons. If then your hardware setup is slightly different or some third party software is running on your Amiga, may speed the demo or consume resources that the demo game needs. Please do not assume the CD is faulty. I am of it is a shame to refuse to run.

There are things you can do to make the software more likely to run. Close to drive any other running software, screens and quick launch will help up new demo. It might be better to cut to the chase and copy the demo game, and then hard drive and then boot with no startup sequence. This involves manually as a booting up down both mouse buttons, then press start with no up tap required.

You'll then be placed in the AmigaDOS shell, and need to know enough about that system to know AmigaDOS is available to where the software is, and run it.

As a general rule, if the graphical details of a demo work, then it is compatible with your machine. Some demos will only ever work when run in this fashion. If you get a message asking for a specific value, then the software needs some help, set up and so it may be that it is an installer that should have been run.



What's in your drawers

When the Super CD 5.0 (or called CUCDS) is opened, the Workbench 3.1 shows that things have changed a lot from CUCDS 4. We are moving for the best layout and responding to what readers have asked for. For a more standard style of layout and to simplify the drawer's structure. Workbench 3.1 drawer such as Path, Support, Utilities and Tools are in the root directory. There is no Support drawer and everything normally found in this drawer has been again fully moved into Tools, System and Utilities. The Magazine drawer has also moved into the CUCDS drawer.

In the root directory of CUCDS:

Wordworth 3.1

This drawer contains the full version of Digitec's Wordworth 3.1.02. In addition to this a superb word processing package, it contains a collection of 34 clip art and 10 different readable fonts for use with Wordworth. These are located in the drawers called ObjArt and FontFonts. Note that Wordworth 3.1.02 will not run from the CD (because it was tested in in CD has been run) but it is a convenient way to load drive with the HD install can.



Worms - The Director's Cut

At last! Worms 1.75 Worms gets an update on the Amiga. Even better than this is the personal help of the programmer, Andy Staddon and so features a great deal that other platforms will never see. The very special Game of Worms. The Director's Cut can also be run on CD32s and CD32 emulation by simply holding down the left mouse button when booting from the CD.

Utilities

Multi-view, Click and some tools for working with freeware images can be found here.

Tools

Contains the Workbench 3.1 tools drawer.

Paths

The Workbench 3.1 preferences drawer and Newborn paths.

System

The 3.1 system drawer is added to the Support drawer from CUCDS 4. The latest versions of MUI 3.6, PathView, Vague, Risk, Pains, NewIcons, HappyNew, GMPay, Play18, DailTheater and SuperView are all contained here to get access to the rest of the CD.

WWW

We've gone to town on the CD Web site this month. There is a new page 1000s of Internet WWW sites which is browsed directly off the CD without need of an Internet connection. Special CU Amiga versions of the games Web browsers, AWeb and Browse, are provided to access the site where an improved menu system is now included for any user who is unsure about the massive level of information and entertainment.

CD audio track: Analyzer

To be played on any 3.1 CD player in a month's CD audio track comes from the acclaimed most popular CD-ROMs. AKA, before you know it's a new 1000s of CD audio tracks, which you may find hard to believe, when you hear it. A new site can be contacted via Drive in a download site.com. If you have a site you think is good enough to be included in the CD-ROM, send it to CD-ROM.com, CD-ROM.com, 30 St. Vincent Lane, London EC1R 3JU.

CD-ROM 5?



Inside the CUCD drawer:



On-line

Another collection of goodies for internet users. Included is a full AmigaNet client, a MUD system, Term and WinTerm Terminal package, AmIRC and Chatbox IRC clients and more.

Programming

There's a great collection of material for Amiga programmers here in AMOS editors. There's the Realtime collection and AMOS pack scripts and example code. C programmers are catered for with the FreePascal debugger and the actual Unix port/emulation library development set. An Amiga port of the Perl scripting language is also included.

Graphics

This month's CUCD5 has a massive collection of both things which all fans in the team took real pride in. It usually means we've done hard to do with, can't be found here. Among the rest of the material is: a drawing tool, an Animator (you name it), powerful image processing package and a collection of animation players of all types. The AGAMorph suite is a saving device can also be found here.



The AGAMorph suite is a saving device can also be found here.

Readers

We've held over the bulk of the reader's material for the Christmas issue. However, we've put some interesting material such as Ian Durrant's guide to a CD drive for the Amiga, finally looking at this month's CD in the cheap feature. There's also Games '93's excellent reader's mail which to look over.

CD-ROM

Are you? Find software for CD-ROM drives including an AmigaNet find package for Amiga CD-ROMs, CopyCDPlus, Gameplay and a lot of the brand new, Game CD, CD writing software. Note: You can't create ADAM .PSP software in the Magazine drawer.

Demos

As you've included all the latest top scene demos including the upcoming StarStream (which is a must read to boot from no-startup to go) and many many others. There's hours of demo viewing entertainment to be found here.

Reviews

Are you new to drawer on CUCD5 you can find some great reviews of software. Software CD-ROMs and many more which you find from a HTML WWW site. You can view them all you have a link on the icon which will allow you to appreciate a review on the pages.



Information

Here you'll find an AmigaGuide to Amiga and collection of 200 press releases. Most of this month's information resources are in the WWW drawer if the rest of the CD.



Utilities

This bumper drawer contains a sub-drawer called Catalysts with a really handy Catalyst on the Amiga. There's a collection of powerful Command line tools such as the linking all thing up all thing up MOP. The hard drive drawer contains a Power Cache, WinBackup, AmigaUp, DriveView, Backup and more. The latest version of GroupDUP can be found here as well as TopManager and other assorted and essential utilities designed to make life easier.



Sound

We'll high off our massive General MIDI file collection for use with MIDIPlay. There's also a selection of modules and audio related tools including AutoLabrill, DMSMixPlayer, SoundTiger, AmiGOS and much much more. Audio heads should find plenty of some related material.

Games

Entertainment central with a collection of PD and demo games. As always we can't guarantee that they'll work on your particular Amiga so do read whatever documentation is provided, checking system requirements and so on. Be sure to check out Super Software's new Jet Pilot Demo and the amazing fields of Battle strategy war game. Those looking for a quick blast can go past Mega Typo on either.

Driving CUCDs

Generally driving CUCDs is as simple as sticking an disc in something you want to use (play, see etc). You should find it will automatically install a player, viewer or run the program without further ado. Of course if you source CUCDs from a directory entry then you can use your own preference of player, viewers and so on the specific files. We can't emphasise enough the importance of sticking on any website in other documentation files inside each directory. There's a simple (see much) material for go to detail here so you'll have to explore, read the documentation and use it each program or whatever it is of use or interest to you.

So have fun exploring CUCDs and don't forget to send us any work of your own so we can include it on later CD-ROMs. Feel free to write into the magazine and tell us what you like to see on future CDs or how you'd like to see them organised. Address all letters of this topic to CD Editor Raypy.

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New this month to Workshop is the first part of a 3D rendering series that will uncover many advanced tricks and techniques for use with all 3D graphics packages.

78 3D Rendering

John Kennedy covers the basics to lay the foundations for up existing and advanced series aimed at all Amiga 3D artists and animators

83 Sound Lab

Soundsets and build ups are the subject of discussion this month in Terry Hooper's musical masterclass

84 Wired World

Innovative forms can transform your Web pages into comprehensive two-way communication points. Matt Robinson shows how it's done

87 Net God

All the latest news, views and opinions on all things Net-wise from the man they call Net God

88 Surf of the Month

Extraordinary coverage when James Connolly takes us on a tour of the World Wide Web to highlight some of the best sites for your browser

95 FAQ

Want to know all about using your Amiga in a video setup? This month's frequently asked questions tackle the main points

96 Masterclass

On tour of the Workshop system stage of this month at the 5th floor, unravelling the mysteries of the startup-sequence scripts

98 Q&A

Get the help you need with your Amiga from the experts due on the Amiga technical scene. Matt and Terry



Feedback

76 Art Gallery

The making of wonders. Art Gallery submissions put you behind every month. Super master 3D graphics are in vogue at once, with plenty of original techniques too...

100 Points of view

Plans for developing your sites in new forms placed on your disk drives. Lisa Collins describes. Views on the scene also from Matt Robinson and Terry Hooper.

102 Backchat

The many voices of the Amiga community are read once again as we spill the contents of the world's mailbox.

Amiga Workshop

Art Gallery

Forget 'Take Hart' (if you're old enough to remember it), take part in our top quality line up of Amiga art.



Artist: Graham Kennedy Amiga, AGA
Software: ResDO 1.2 and SPaintIV

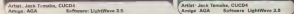


Artist: Vince Perry, Wales
Software: ImageIt V2

Amiga: A4000/25, 16Mb RAM



Artist: Jeff McDermott, Stas/Comet-Test
Amiga: AGA
Software: ImageIt V2



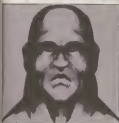
Artist: Jack Tomoko, CUCCA
Amiga: AGA
Software: LightWave 3.5

Artist: Jack Tomoko, CUCCA
Amiga: AGA
Software: LightWave 3.5

Picture of the Month



Artist: Michener, mchenr@u.wingny
Software: Adobe, ImageX 1.0 and Image 3.0



Artist: Dennis Kennedy, CUCDA, Amiga AGA
Software: Real3D 1.0 and DPaintV



3D Rendering

PART
1

The perfect pair: rendering and the Amiga. Welcome to a new series dedicated to their heavenly union.

Ray tracing and the Amiga go back a long way, as anyone old enough to remember the Juggler demo will tell you. The Amiga was the first affordable computer that could create realistic images out of thin air. To its credit, it was also the first that could display them with enough colour. However, that was a long time ago when the A500 was state-of-the-art and I started the occasional club by borrowing someone's hardware such as a 68000 accelerator and an old mobile software like SoftCell.

Things have progressed much further since then and rendering is pretty much part of the course. These days, with high-grade programs such as RayTracer and practically all big beasts like SGI demonstrating how good computer graphics can look.

So, in the first of a new series, we take a look at the past and present of image rendering on the Amiga.

What is rendering?

A rendering program takes a three-dimensional model built in computer files and creates a two-dimensional image. The image is then viewed using a sort of program which allows the viewer to look at the object attributes to be altered by the user. (1,2,3,4)

The image can then be placed in a virtual world, moved around and scaled. Other objects can be included such as light sources to provide illumination, backdrops and the ground. A virtual camera can then be positioned and pointed in the right direction. Finally, the image will be rendered, as the computer determines what the camera would see. The image is then displayed on video disk.

The time involved in this process can be extremely complicated and so rendering the image can be a very time-consuming task. Even on the fastest Amiga, a detailed high-resolution image can take many hours to create. The best a single image in low resolution can be generated on with an unexpanded A1200 within a few moments.



A Rendering program also uses a model and places objects anywhere in the virtual world. In this scene, a small box is being moved with its keyboard object. It is also the Amiga's first attempt at ray tracing.

Ray tracing

Raytracing is a special case of image rendering. However, not all image rendering is the same. Raytracing is. Most of the images you'll see are created generated with scan-line algorithms which calculate how the image appears. It is a bit like, pixel by pixel.

For every pixel, the computer calculates the objects in front and then calculates which the camera would see. It also finds out how the object is affected by the objects and how the light reflects off the object.

Ray tracing works a lot differently to the scan-line method. Instead, every pixel in the display is imagined as a beam of light entering the camera. The software then traces it back into the scene, calculating how it will have been reflected off surfaces or distorted by passing through transparent objects.

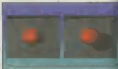
Ray tracing takes a lot longer than scan-line algorithms but it makes it possible to accurately create shadows and complicated optical effects. A lot of the time

you wish to use ray tracing isn't the very end of the creation process and it's not that difficult to be necessary.

Animation

Animation is an extremely progressive, multi-stage process to create a film. It's an art form. A moving picture has had about 100 algorithms in it. Integrated with ray tracing, it's a bit like a film.

Most rendering packages are designed to do a lot of things at once. This allows you to



A. The image on the left has been rendered, the image on the right has been rendered but not yet been displayed.

Desirable Hardware

If you're already using image-rendering software, you might be tempted to get a fast computer to speed up your hardware. This perception of the software's capabilities means that a fast computer is essential. Actually, a fast 386/486 is better. A Pentium processor (750) and more storage effectively increase the working set of your software, increasing the effectiveness of the hardware's abilities.

Memory is important too, especially if you are dealing with large-sized models. An 8-megabyte or 16-megabyte image is as much as 10-megabyte 3D file format size, but by 16- or 32-megabyte, if you are interested in using big simulations, the more memory you have the better. More RAM means longer and smoother playback.

A hard drive is as useful as I should like to overstate it. Having to load and save objects and the pace to and from floppy is such a tedious business, I can supply this in lieu of any creativity. Put it high on your list.

My friend, for example, in frame one a car may be on the left of the screen, in frame two it may be on the right. The in-between frames are calculated by the rendering program.

There's a lot more to it than that of course. Color and light models can move the view from a car by enough a distance for suspension and wheel work and sets. On the computer, however, you change over to the camera, flux, shape, color, and texture.

You have rendering packages allow objects to flow, in 3D, and only by allowing them to be used in a hierarchy. For example, given a human hand object, constructed from a dist-



A 3D rendering package can use an object in space to a totally realistic way. Here, the object is made up of wireframe and flux, and wireframe of flux.

I M A G I N E



Imagine Studio has a new going to make the game market to the 3D business. Here is a 3D game engine of the world's most difficult to use software and the engine.

and the hand. I should be possible to make it and in one go rather than having to make it in the past, individually.

What's on offer?

There are a lot of reasonable number of image rendering packages available for the Amiga and most are at the development stage. Some have been with the Amiga for as long as I have used, others are relatively new. All of

them are a capable of running excellent images. However,

Imagine

Imagine is one of the original image rendering programs on the Amiga, having been called Turbo Render in its previous incarnation. It is currently in release 4.5 (see 3D World) and by the addition of Amiga and CyberGroup's support.

Imagine is an excellent package, although it can take more than a little compo to set things up. Once you get the hang of it, that's putted for screen and each though it becomes reasonably easy to use. Imagine's 3D (3D) of spatial levels are not nothing out of the world. In there was one problem with Imagine. It would be to non-standard Amiga interface. It doesn't look as good as the Amiga programs. In fact, the PC version is different in all respects.

Cinema4D

Cinema4D is the most recent package and it is being distributed by Hilti in the UK. Its user interface is very modern and a complete contrast from Imagine. Like Imagine though, it's easy to use and built up using the software called Hilti. This makes it possible to create extremely accurate copies of real objects (though I can't say for a while). Cinema4D has a very easy to use interface for creating scenes with objects. It's easy to animate them in 3D space, such as human figures. There are other features, such as the fractal object generator which makes it a bit different to the standard computer-generated landscapes.

Real3D

Real3D is a 3D software from other publishers. In their objects are constructed

From: Chenggang.Chen@unhcr.org To: Chenggang.Chen@unhcr.org

¹ *Journal of Management Education*, 2000, 24(1), 10-19.

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Not God speaks here!—a new buzz word floating around the Net this month causing a lot of speculation and excitement. The network computer (NC) is replacing the PC as the main reason for the excitement. So what exactly is behind the wave of anticipation for ideas that programs on the NC will be stored and downloaded from the Net rather than the PC is the main reason for the excitement. The advantage of this method of storage is that the programs are kept up to date and can be changed on a per-use basis. This is half of the idea behind WSO, or "Web-based Software" though it still hasn't proved if these new machines don't need serious hardware specs but require efficient operating system and good Net connectivity, surely the Amiga is the perfect NC? Programs could be written in the multi-platform Java for compatibility. All we need is a serious effort to port Java to the Amiga. Are volunteers out there willing to take on the job? Could we learn step by step and now

Surf's up!

iBrowse goes to correction school, the new IRC on the block wins over fens and it looks like networking on the Net is here.

ICI and Damon form script
Some time this month a Web browser to press use iBrowse and ICI scripts for Forms on both iBrowse/ICI and Damon the subject of the tutorial this month (see page 84.88). Using the new script means the need for the Amiga to go is deleted in the future. For iBrowse/ICI the "HTML" tag needs to be changed to something like the following:

```
<FORM METHOD=POST ACTION=http://www.damon.cc/cgi-bin/ici/htmlmail-form.pl?subject=...>
```

Please note that this example needs to be all on a single line so don't be when on the Damon Web change prohibited so all to you can iBrowse address and change Subject to the subject of the Form data field.

Using the version of iBrowse 1.00 out your Form and it is submitted you will then be directed to the Form data in an easy to read form. Since you have the ability to set the Subject Field I would be also possible for HTML and it has means to form the message a separate folder for even earlier processing.

Damon's script is a must for a simple best however for examples:

```
<FORM METHOD=POST ACTION=http://www.damon.cc/
```

will place the Form data to webmaster@damon.cc don't go for this reason it is important that you are able to process that to the webmaster on your server.

iBrowse gets update

ICI iBrowse was released Amiga 2.1 and iBrowse 1.0. At the time of press iBrowse had several problems such as crashed when ending the program. However ICI Amiga Magazine are pleased to announce that iBrowse have now released an upgrade back to 1.02 on iBrowse author. So far it is a big help (www.ici.cc) and we can happily report that iBrowse now seems far more stable. After a week of rapid use there weren't as much as a "bark" from the ICI Amiga office machines.

Compensation to iBrowse for programming out. This new means the Amiga Browser competition is neck and neck once again.

On-line chat

Regular IRC users can't have missed the fact that the iBrowse network where the iBrowse Amiga channel resides is a little busy at times. Requests and server logs have become an interesting problem and the permanent address (this site doesn't help matters) in the iBrowse network are better in the regard but suffer because they aren't as popular as iBrowse.

However the iBrowse IRC network (iBrowse) seems to be making more popularity and sports advanced features such as registering users in channels and channels. This means the channel size



A. Damon's from complete guide, design and more is supplied.

over will become virtually impossible and no one will be able to chat your machine.

Currently the most popular Amiga channel is #AmiNC which is named after the popular Amiga IRC client. You can see this and any of the others by being any of the following: iBrowse, iBrowse and iBrowse. #AmiNC channel will be able to chat and phone in on the net. All on port 6666. Contact http://www.damon.cc for more information.

ICI's iBrowse site

ICI the people responsible for the iBrowse system have recently established a new WWW site located at <http://www.ici.cc>. This site contains details of the company's ICI Amiga Magazine, ICI's iBrowse to PC network, iBrowse web and their range of Amiga Power Station responses. ICI tell us that the site is still under construction but already there is quite a lot of information on the iBrowse and the new on-line Amiga to PC ICI system as presented on page 80 in this issue.

Of special interest to dual Amiga/PC users is the planned ICI/PC bridge between the Amiga and the PC via iBrowse. This will be able to run on the PC's version of iBrowse's iBrowse client. Give it a try, iBrowse to PC and check it out for yourself. ■



As that is one case, although not finished yet, already has been a useful information on iBrowse on the iBrowse of the PC connecting today.



Surf of

Our Stateside correspondent Jason Compton takes time out to highlight some of the best sites of the World Wide Web.

What a nice turn of events. Not the World Wide Web (although it is pretty well known that CU Amiga readers will find that we get to point our readers towards their favorite resources and helpouts on the Net. I'm going to be a part of it, and hope that we should inform you, ourselves, and a team at least one of you.

Amiga Directory

I'm sure CUUG and gamers expert Mui Betenson has mentioned this site before, but it bears repeating. If you're looking for a launching point for visiting Amiga on the Web, you should start from the CUUG (Chicago Urban Computer User's Group) Amiga Web Directory at www.cuug.org/amiga.html. This is where it's at for Amiga news, company links, other Amiga site listings, you name it. And since the implementation of the Amiga search tool, there is a really no Amiga topic that you can't find information on from the CUUG site. Plug, Amiga, will even search back issues of Amiga Power, and CUUG has an extensive back issue collection of the digital magazine. CUUG will get you to almost anywhere else you want to go for Amiga related informa-

tion, but there is a new page that's worth at least an hour's worth of time when Amiga's are concerned. It's not much to look at, but the Freely Distributable Database Page has the best database of CUUG's database. I've never seen Database as I like you too, that all in the background and automatically convert the types for use with various software packages, including Web browsers.

Painttop Page

When I'm doing serious computing, I'm using an Amiga. But when I'm out and about, I sometimes feel the need to make a quick doodle, make an appointment record, or just play a good game. That's why I picked up a Palm painttop computer (or PDA as they're often called) from the UK company of the same name (as featured in the previous issue of CU Amiga Magazine). In the field of painttops, the Palms have one of the best operating systems and built in software around, and they have the extra advantages of being easy to program (here's the aforementioned games), including a full blown Internet, lets point to you can play and on the Internet, and

classic text adventures, but there's what you download and they're inexplicably easy to use, so to speak. Go, Chameleon! <http://www.palm.com> for more information on these neat devices.

Euro-US Football

Here's one for sports fans. The World League of American Football has 6 European franchises, two of which are in the UK. The 1996 World League Champions, the Scottish Claymores, have an official website at <http://www.claymores.co.uk>.

Or if you think American Football is too slow and the field too large, try the Arena Football League at <http://www.arenafootball.com/league>. The game is played with fewer men and a much smaller field (60 yards wide versus the 120 yards of a regular NFL field).



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1. The first step is to identify the problem. This involves understanding the symptoms and the context in which they are occurring.

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¹⁰Second floor: 778777 Indemnification Board.

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- Create SUPER intelligent GANT inf. level and end of level characters, just for the very best commercial games!
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REALITY can be used to create many types of other software products. It is easy for TOP notch games! Create HUGE shoot and run ups! Add more and more game effects, level ups, Point and Click, Graphic Adventure, HUGE Arcade games, Puzzle games, Racing games, Card games and much much more! Even create your own third person space effects games or use friendly Educational software! Just look at the screenshots in this advertisement and you just need try, you'll be really amazed at...

Over four years years of work has gone into the development of this Software!

The result for 4 YEARS OF THE BEST SOFTWARE CREATION SYSTEM is incredible. It is easy to use, it is incredibly fast! It is the biggest ever breakthrough in Amiga software creation and has already been used to create twenty commercial games and a multitude of PD software!

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This will provide you with a quick helpline, a part will be always open in context and work with the strategy. MASSIVE REALITY assisted hints, advice and the great you will also have access to a HUGE range of software that has been created using the REALITY system and 1000's of page's worth of sound effects and music tracks which you can use with your own software! You are writing to publish any software that you create using REALITY and you wish you can have other computer to publish your work! The REALITY user club can supply you with all the programs, music, sound effects and data that you need to create superb software with the system. All the hard work has been done for you!

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Screenshots of games created with REALITY



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FAQ

Frequently Asked Questions

Adding animators and film makers take note. The Amiga and video are the perfect creative combination.

Q. Why is the Amiga so good for video work?

A. The Amiga was created as good to work with a TV set as the many display. Back in the 80s the Amiga was designed to be a games console and home computer and its few people that wanted to buy a dedicated VCR processor the TV was built to be a VCR. The Amiga has a very fast, high quality video output which can be used in RGB or Composite video format for great results.

Q. How do I connect to my video recorder to record Amiga graphics?

A. It depends on your model of Amiga. An A1200 has a photo video output for Composite video. Some video cards that have an RGB output (often designed for use with Camcorder) called CV or Composite in others have RGB outputs which you'll need a RGB-to-composite lead for.

A500s and A3000s have RGB outputs but you'll need a module or a patch to record the output into video tape.

Q. What's the difference between RGB and Composite? What's RF? And what's SVHS too?

A. RF is the Radio Frequency signal. It is the easiest though for the best quality (only for the video recorder in a display or picture on a TV set) is a low power TV signal. It can be used for all the quality of a good video output. A RGB output video card will be required to use the Amiga

lead with a module like the one shipped and used with most A500s does the same thing. Composite video consists of the video information on one cable whereas RGB keeps the colour separate (Red, Green, Blue). It produces a better picture (but composite and is used mainly with monitors and good TVs where the three video signals are fed directly into the three video guns which make up the display. A computer signal must be fed into the three colour wires which affects quality.

SVHS is a format when recording as it divides the video elements into two colour and brightness (chrominance and luminance). The C202 is the only Amiga with an SVHS output although some get RGB outputs as SVHS output. SVHS is the best quality video but not suitable for home use. VCRs which support SVHS including colour analog which are much closer than standard VHS.

Q. Can't I make use of the better RGB signals with my video? It's fitted with a BNC socket instead the back.

A. Although the problem in the schematic of the Scan board, few video recorders support RGB output. They only want RGB for display. On this for video output recording RGB signals.

Q. What will the Amiga let me do with my video?

A. You can record anything the Amiga can display which means

you can create video played scrolling credits, subtitles, menu screens, your own cartoons.

Q. Which screen mode should I use?

A. Always use a PAL, standard mode such as HRES 560. It's a compromise. It's to use Interlaced mode although it does in a minute it can look good when selected on video tape.

Q. How can I create sub-titles?

A. You'll need a patch for that. It's a piece of hardware connected to the Amiga's video output. It allows the Amiga graphics to overlay the live video. For example you can create a black rectangle containing white text and create subtitles.

Q. How can I display computer graphics 'behind' the live video?

A. For that sort of effect you need an extra box of video called a Chromakey which can electronically remove darker colours from video and replace it with a computer generated background. Such as a weather map for example.

Q. How can I create animated subtitles and scrolling credits?

A. Use an Amiga art program such as Deluxe Paint or Pencil Paint. An authoring system such as Cardfile is excellent for linking together multiple animations.

Also video can be displayed video during program such as titles which will be video excellent text and scrolling features. Video output video often come with their own special fonts which

look very when listed on video.

If you want to record very long animations, use a program such as Viewpal which can scroll animation directly from disk. So for example you could create a huge animation with images and then use Viewpal to play it back while you are recording it all on your video recorder (tape) day.

Q. How do I get rid of the ugly borders around the screen?

A. Use OVERSCAN. Film programs will allow you to open a screen in OverScan mode and this will stretch the screen out on all directions so there is no border. It is therefore possible to create animations and display without which fill the entire video screen.

Q. On my Amiga can I control editing between two video recorders, a VCR and a camcorder?

A. Yes there are various hardware/software packs around which can do this. For more details see some of the special video based magazines available.

Q. Can I digitise live video, edit it and then play it back?

A. Yes but not easily. This is now known video editing. For that results you'll need a very fast Amiga fitted with a huge SCSI hard drive and a hardware MPEG capture and display board. VLAB Motion is one such card.

You can get a budget version called VideoMaster from Dynalab (tel 01845 713 184) which will record quarter-speed scanning in 16 colours. Not broadcast quality but excellent for entertainment.

John Kennedy

Masterclass

PART 4

Which is the most important file on your Workbench disk? We reckon it's the startup sequence and here's why.

Ever wondered what the hell was for when your floppy or hard drive booted? Or why the same happens? Please yes! I mean, popping up asking for a disk you haven't got? All it could read.

\$ Revisited

Although we have looked at it before, the \$ directory is so important, it is worth taking another look at its contents. The file left uncommented in page 37 illustrates what you will see if you open up the \$ directory on a Workbench 3 machine. You'll need to use the Window menu and push Show All Files to see the contents of \$ because by default the files do not have any icons attached to them; if you have Directory Opus 4 (which we gave away in the February 88's cover) you can use it to view the list. Has it \$ it's easier.

For the purpose of the tutorial we'll look at exactly what \$ contains and will go on to explain what the various files do.

Startup sequence

One of the most important files on the disk is the startup file called `start`. When the computer is booted up after being switched on, it looks in the \$ directory to see if startup sequence is present. If it is, it loads it off the disk, executing the list of AmigaDOS commands it contains.

Several have important things in the disk in the startup sequence, including patching any bugs in the operating system, setting the keypad used by the keyboard, creating important directories and copying files to the RAM disk. Eventually, the startup sequence loads the Workbench environment.

The list on the right shows what a typical startup sequence looks like. I've added the line numbers so they would appear in the file. (See Figure 1).

The following is an explanation of what some of the more important lines are doing in the sequence:

- [1] Use the `DEFSHELL` command to fix any bugs in the operating system. The bug in question was very rare from appearing on screen, but would cause the Shell to be displayed instead of the other screen, suddenly being replaced by the Workbench as it pops up.
- [4] Use the `Version` command to display the current Workbench and Kickstart release. However, the output is not printed on screen - it is sent to the dummy device `HL`. So why do it?

Because the command also passes the version into special variables `Kickstart` and `Workbench`.

- [5] This command gets extra system memory to act as a buffer for the external floppy disk. This speeds up access. If you have a reasonable amount of RAM, you might want to increase this number to 35. You can also add buffers to hard drives and other floppies if you wish. These are always added by default.
- [6] This makes sure the script won't stop with an error if some thing bad happens. The error will be reported but the script will carry on to the end.
- [8] Four devices are created as the RAM disk: `T`, `C`, `Clipboard` and `Log`.

- [9] The contents of the directory `DEFWARE` (including any sub-directories) are copied from the boot disk to the CMV directory in the RAM disk. It's here that many programs store their preferences and so copying it

Figure 1

```

20 : DEFSHELL startup-sequence 32.0 1.0.0
21
22 : PatchPatch 0000
23 : CopyVersion $VCL
24 : C:AddedData $VCL: DPO: 10
25 : Patch 00
26
27
28 : C:CreateDir $AM-T $AM:Clipboard $AM:CV
29 : $AM:CV
30 : C:Copy $VCL: DEFWARE: $AM:CV: ALL WARE
31
32 : $AM:CV $VCL: C: Assign $VCL
33 : $AM:CV $VCL: C:CreateDir $VCL
34
35 : Assign $VCL: DPO: $AM:CV
36 : Assign $VCL: T: $AM:T
37 : Assign $VCL: CLIPB: $AM:Clipboard
38
39 : Assign $VCL: $VCL: $VCL
40 : Assign $VCL: $VCL: $VCL: $VCL: $VCL
41 : Assign $VCL: $VCL: $VCL: $VCL: $VCL
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Logos, meanings and mysteries:



CD-ROM queries, format and various other CD-ROM-related problems



All about upgrading RAM, operating systems and processors



Plug in the future of any kind of storage, also doing a bit



Answers to queries on particular pieces of software



Music sampling, MIDI and any thing that makes a loud noise



Miscellaneous facts to keep your Amiga running smoothly



Form factors, page layouts, preferences and lots, lots more!



Monitors, TVs, modulators, screen modes and all that stuff



Mice, opticon, buttons, in one small word: graphics



Soundboards, keyboards, speakers, accounts



Everything you need answering about the Internet



Not everything the help is programme, but anything you like the idea to turn



Got a problem with your Amiga that you just can't solve? Don't worry we're here to help. Send in all your Amiga-related problems to Q&A, CU Amiga Magazine, 30-32 Farringdon Lane, London EC1R 3AU.



Yes, we're here to assist. So please don't be shy about sending in those niggling problems with your Amiga.



Forget 'niggling', I want BIG juicy problems that I can get my teeth into. Go on: have a go if you think you're hard enough.

Going up ...



1. Will an FPU on my A1200 RAM board make games such as *Colony* on a faster?

2. How can I stop my screen flicker up in a Commodore 68040 when I play *Street Racer 2000*?

3. Is there any way of presenting a picture becoming solid in the Workbench background?

4. I am currently thinking about buying a CD-ROM drive and an external hard drive. Can they both run a motherboard if connected via a Squared SCSI interface?

5. I have a 1200 RAM board. Can I use it on a 1200 RAM board?

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The first thing to check is the setting. Is everything plugged in properly? Is the drive 'spinning up' as you launch the game? If it's not, and it's showing an error of 10, it will then start to come up with an error code, or the workstation may have been fixed.

MMU query

1. What exactly is the MMU (Memory Management Unit) and what software takes advantage of it?

2. I have a 1200 RAM board. Can I use it on a 1200 RAM board? I have a 1200 RAM board. Can I use it on a 1200 RAM board? I have a 1200 RAM board. Can I use it on a 1200 RAM board?

Michael Connell, London

1. As MMU memory strategy, as its name suggests, the main reason for its use is to allow memory to be used in a more efficient way. It is a good idea to use it on a 1200 RAM board. Can I use it on a 1200 RAM board?

2. I have a 1200 RAM board. Can I use it on a 1200 RAM board? I have a 1200 RAM board. Can I use it on a 1200 RAM board?

Imagine crash

I have recently come across a problem in the Amiga 1200. I have installed it on a hard drive when I try to access any file or directory, I get a crash. Please help!

Green Coble, Luton

Stuart Black, Bristol

Have you checked that you're installing the correct version? If you have an A1200, you need to install the Amiga 1200 version. Installing a version with FPU version will crash the machine.

Sprite errors?

My A1200 has problems with OSLTPM, MULTISCAN or other resolutions above 640x480.

1. I have a 1200 RAM board. Can I use it on a 1200 RAM board? I have a 1200 RAM board. Can I use it on a 1200 RAM board?

Paul Hendrick, The Netherlands

Presumably there then are another problem (as opposed to people being wrong by the Amiga) that is worth like your number is fairly. If it's the Amiga controlling the problem, that may be the result of some misconfiguring with the monitor drivers using the OSLTPM program.

Memory swap

1. I am thinking of buying an OSLTPM board with 4MB RAM. Can I use the 2MB of my Hawk RAM board to give me a total of 6MB?

2. What would be the best way to add a CD drive to my Amiga? 3. How can I use ColoredOS with out 1. stopping the Nameserver down to eight characters? 4. When I try and compile some of my programs in AmigaOS I get the message 'Program not found'. I have run and tested these programs and they work fine on

Stuart Black, Bristol

Points of view

Grabbers for Pete's Sake



■ Dan Hartman is
CEO Amiga magazine's
technical editor

by Dan Hartman

I'm constantly being in companies like Microsoft, Sony, and Nintendo. Amiga. It can't show up in the same way as all many Amiga users have good deal of this company they have decided to play platform. I'm not

going to elaborate any further feelings for the lack of official Amiga development but I can back up why I continue to use the Amiga.

I have a PC myself and it's been a learning experience to discover its strengths and weaknesses. It's important that we do not let our biases about the PC platform even if it may be depressing at times. It's not a one-sided argument though. I can hold my own quite well explaining to a PC user why I use an Amiga based on facts and experience, and win a demostration!

At first, a blow-by-blow technical comparison between platforms is a little hard to see that the PC is a great machine for everything but applications. It's a great machine for 3D games and you can't match powerful the platform's hardware but it needs to be something. There are the Amiga's weaknesses. It's a variety of reasons those who have departed the Amiga platform usually count those aspects as being important and didn't want to add additional Amiga hardware.

The big sale of the PC is a surprise in software space. If I need a program to do virtually anything, it can be found in some form on the Internet free and usable. It will fit into my system nicely and the most I'll have to

pay is a shareware fee if I can't print it. Not on the PC. Not only is there no free PC shareware, it's harder to find, totally non-standard and more expensive to register (which is almost always obligatory).

In short, it's a pain. I once had to download five screen grabbers to take Windows' icons the job but I needed a program to save null before I found one that didn't corrupt the pictures with a load of unnecessary text all over them. A screen grabber for Pete's sake!

Being a lot of a techie type, I love to have dozens of small programs and a few big packages running on my Amiga on different screens. Regular multitasking away. This is not the sort of thing the PC is good at. In that respect, I use both and can appreciate what they do well, though the Amiga is fairly my favorite.

Depending on your own needs, it may well be worth investing in Amiga hardware on the basis of the Amiga's superior PC and shareware catalogue. For instance, why not compare what you get on CD Amiga's new CDs to the contents of those on PC Magazine? It's a good example of the Amiga's readers therefore not voice case that the PC just can't touch. ■

“Those who have departed the Amiga ... didn't invest in additional Amiga hardware.”

Giving the Game Away



■ Lisa Collins is
a magazine cover's
regular editor

by Lisa Collins

Recent games in the magazine cover disks are doing good. The general consensus amongst software houses appears to be that cover-including demos of their latest releases is becoming potential sales.

When I spoke to Ben Jenkins of Edge Software recently, he admitted to a little less going that he left a general rule of thumb was that if someone gets a cover disk version of a new game from a magazine they feel they don't need to buy the full version as they have enough of the game on the demo. And can't come to all that mess that they have already without actually buying it.

I disagree. Really from the software publishers' point of view, the idea of cover disks is to create as much interest as possible in any forthcoming game. It's a much like a warning trailer for a new movie at the cinema. If gamers are satisfied with just

one or two levels of a game then that would be the standard use of all commercial games. Clearly it's not. While we do our best to make sure our cover disk game demos give you as much information as possible, do they expose them to take the place of the full version. How do games companies expect to create any excitement of their game apart from adverts and perhaps a news story or a review a few months before the game is released?

Where's all this going? Will we have software publishers trying to up their sales by not to put anything about their latest release in case it might harm sales? I think not. Because any sort of publicity is good publicity, if software houses are seriously worried about cover disks damaging their sales, then they should release a shorter version of the game or a limited demo. But decide to skip cover disk demos altogether. ■

“Will we have software publishers telling us not to print anything in case it might harm sales?”

I Have a Dream ...



by Terry Winograd

I was talking to someone about the Apple II and the future of the Amiga. I especially remember I had one of the II's. It is a topic we've all discussed before—often with people who don't know much about the Amiga and the whole graphics board in the Amiga game. What was notable about this one was that the other party was supposedly well up on the personal computer industry and markets, with a substantial business interest in the Amiga market, but was convinced that not only would there be no other Amiga, but there was not even a demand for such a machine. Apparently this was a belief shared by their colleagues too.

The fact is there is such an open market a lot like the IBM PC clones have now achieved global domination in the home and office. With such high market penetration, it would be impossible for another platform to take over. That's why PC, computer, computer = PC, and it stays.

The suggestion that there might be room for an alternative computer platform seems if it could be smaller than the PC, was brushed aside as pure commercial naivety.

Unfortunately this is a commonly held belief among almost everyone outside of the Amiga scene, or at least among the people that matter: those at the top of the major computer manufacturing companies who decide what goes into development and what sells off the production line. Of course there is room for a next generation Amiga, whether it beats the Amiga name or just takes the view on to the next stage. A new Amiga and I mean a brand new one, not an upgraded A4000, has the opportunity to start from scratch, to totally make fine the way personal computers work, to get in place new standards and guidelines for the rest of the industry.

Imagine then, a completely new breed of personal computers that is not I'd be to any of the existing computer systems that happen to be out there machines. Do you remember how revolutionary the graphics user interface was when it first appeared? Or what about the first time your car in Amiga running a bunch of programs all at the same time? These were some of the innovations of the II's, that have changed the way we work with computers for ever.

Don't expect similar innovations to be asked for the PC scene. So long as they are locked into the ongoing development (based on ancient tech) industry, held together by a single reference machine demanding huge amounts of money for the latest multi-tasking system, there is never going to be any real progress.

So, the only way we are going to see a new next generation computer platform is if someone manages to bring out a machine that goes right back to the drawing board to completely rethink every aspect of the personal computer. That is an institution to a computing system in its software.

As long as there are computer enthusiasts who think for themselves, question the hype from the marketplace and know what they want to do with their machines, there will always be room for a computer like the Amiga. Here is the big question though: is there a company with enough vision and courage to do it?

The finance and marketing club to make a commercial success of such a ground breaking initiative? At the moment the gulf between those companies with the cash and those with the vision is vast. It is all very well a small company developing a few niche home platforms, but if they can't manufacture, I am a realistic piece and tell the world about it it is never going to get very far. What is required is some kind of joint venture between a powerful established player in the computer industry and one of those smaller developers. The crux point is whether anyone can convince both sides: finance, a risk taker, vision and a deep understanding of how to design a new kind of people's computer. It is a very tall order, one that so far has not been met by any one company.

But who then, not a team, the Amiga name in the end, I firmly believe there will be a next generation personal computer that inherits the subtitle. Moves us all away to the Amiga, but when it first appeared and clearly another 10 year march on the competition. Just you wait and see. ■

At the moment the gulf between those companies with the vision and those with the cash is vast.

99



IBM Amiga 4000 is a great one when it comes.

Here's hoping history repeats itself

August 1990: It's the first time in the history of the magazine that we have a cover story about a game that is not a new release. It's the first time we have a cover story about a game that is not a new release. It's the first time we have a cover story about a game that is not a new release.

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Duke of Dredge, Peterborough

A lot of old games. Duke of Dredge was the greatest game ever two years in the past.

Our alien who brought us Worms. It's a game known by game addicts all over the world for being the most original. He's now bringing us Worms AGA. The Greater Worms and Worms 2 Looking at CGA Amiga magazine you can see a new generation of games developers. Some might say that games aren't all that good, but you might imagine what they'll be able to do in time to come. There are the types of people and companies which we should cheer on and not get involved with at this time when making a game. They are either keeping the Amiga alive and then die the future, or we have their heads that we have no choice. Due to the lack of games, people have been around my Amiga to fill capacity. People like you and me have been buying accelerators with extra memory, CD-ROM drives and modems. No video card of games have been lost. We have spent a lot of money upgrading the spec of our machines leading to the spec of games going up. We'd be proud of what we have achieved as now accelerators are cheap, meaning more people are spending. We've had enough of people saying my machine is dead. Dead means without life but I can tell you without having got that there is life in our Amiga. If you want to be negative about the Amiga then do it somewhere else but not in the newsgroups and not in the magazines.

We have a future with so many companies wanting to make Amiga it can only be a good thing. We must not sit back. We should be selling software and hardware companies what we want. We should not be saying I'll let everyone else do it and I've got no time. Make time. I personally emailed a games developer and gave him my support and he emailed me back, thank you. You can make a difference so don't become a part of the problem by moving my machine to a dead spec. It's all the possibilities that have happened and are still to come. I hope people will agree with me.

Philip@smallman.dart.co.uk

We do not want you to agree with you

Time on my hands

I hope that your website is more official than numbers. Is your old car really that slow then? You can't live with a spare spare only.

David Optner, Penketh

Some people must have very little to do. Actually it's not that wide really, as wide buildings go. Not as wide as, say, the Guardian newspaper building just over the road from us. That's probably about the widest building with. Presumably there aren't many

wide buildings in Penketh? They don't go for space making progressively narrower jobs.

Cover chaos

Something fishy is going on with your new November issue. It couldn't work, it just didn't. But then it did. You've got a new issue and cover, each featuring a different character from The Chase. It's not a play to get us to buy both editions of the magazine and thus sell more or more copies? Or maybe it was just a mistake? Explain please.

Thomas Gleditsch, Leicester

Well spotted that one! Indeed the November issue is something of a collector's edition with the Perry and the Merryway cover being their own covers. Why? Because we wanted to, and the first issue the editor on the Perry edition while the Perry was in better issue in the CD cover.

Good on ya

I am writing in to agree with Ben God about the state of the world of the Amiga community who are trying to benefit the Amiga community. I am writing in to agree with Ben God about the state of the world of the Amiga community who are trying to benefit the Amiga community. I am writing in to agree with Ben God about the state of the world of the Amiga community who are trying to benefit the Amiga community.

David Outman, Brisbane, Australia
Email to david@pewee.com.au

From the pulpit

About the time Amiga 1000 was being sold by MCMPC. I used to say to you, say Amiga. Because then I could make you see a lot of MCMPC. I repeat the magic word, MCMPC. The new Amiga 1000 is completely new. It has to include part of the old and the new. It has to include part of the old and the new. It has to include part of the old and the new. It has to include part of the old and the new.

We need games. Games attract those potential buyers. So the MCMPC the best thing to do is to be a good buyer and make them see the most beautiful and exciting game in the world, and oblige shops to put it on a demo on the new Amiga.

As for the Amiga 1000, it's a new thing. It's a new thing. It's a new thing. It's a new thing. It's a new thing. It's a new thing. It's a new thing. It's a new thing. It's a new thing. It's a new thing.

Dan Pappalardo, Belgium

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Next Month ...

3 DIMENSIONAL EXTRAVAGANZA!

We've got a real treat in store for all 3D rendering fans in the January issue of CU Amiga Magazine. In fact, it's so hot we're sworn to secrecy until the issue hits the streets on December 15th! Needless to say, you will certainly not be disappointed. This is one issue you will not want to miss out on!

Also ... A career in graphics? So you want to make a living out of computer graphics? Make sure you pick up the next issue of CU Amiga Magazine for all you need to know about how to break into the exciting computer graphics industry, from games all the way through to Hollywood special effects studios.

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